16th International Cognitive Linguistics Conference

ICLC16

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Welcome to Düsseldorf

34 years ago, in 1989, the first International Cognitive Linguistics Conference (ICLC), organized by René Dirven, took place in Duisburg. What started out as a one-day event quickly became a large biennial conference with more than 500 participants attending each iteration. With the 16th International Cognitive Linguistics Conference, ICLC returns to Germany, and we are more than happy to host this event in a city that is just a 15-minute train ride away from where the inaugural ICLC took place. Also, ICLC16 takes place almost to the day four years after ICLC15, which was held from August 6 to August 11, 2019, in Nishinomiya, Japan.

ICLC16 was originally scheduled to take place in Buenos Aires, Argentina, in 2021. As we all know, life had different plans. The ICLA board decided very early on to postpone ICLC16 by not one but two years. For various reasons, the location had to be changed as well. Düsseldorf may have been a surprising choice – at least it was for us! – but we are more than honored that we were asked to host this prestigious conference, and we are doing our best to live up to the expectations that this entails.

The fact that Düsseldorf was selected to host ICLC16 certainly has to do with the fact that it has developed into a "hub" of cognitive and usage-based linguistics in recent years. For example, Düsseldorf is home to the German FrameNet Constructicon project, which is why it makes sense that this year's International FrameNet Workshop (IFNW) takes place in conjunction with ICLC16. In addition, HHU Düsseldorf hosts a number of corpus-linguistic projects that take a usage-based perspective on topics such as multilingual language acquisition, the grammaticalization of future constructions, or the language of extremism, to mention only a few endeavors in which the organizers of this year's ICLC are involved. In many ways, Düsseldorf is also a multilingual and multicultural city. For one thing, Düsseldorf has the third-largest Japanese community in Europe, which also provides a nice link to the previous ICLC in Nishinomiya. For another, a famous isogloss runs through (a suburb of) Düsseldorf: The Benrath line separates High German from Low German, which is considered a language in its own right (but is rarely spoken nowadays).

We hope that you will enjoy Düsseldorf and that you will have as much fun at ICLC16 as we had organizing it! And yes, we did have fun organizing the conference – although there were a few hurdles to overcome, we were lucky enough to have invaluable support from many people. Thanks to them, the organization process went surprisingly smoothly. In particular, we would like to thank our sponsors: the German Research Foundation and the *Gesellschaft von Freunden und Förderern der HHU Düsseldorf* as well as the publishers De Gruyter, Brill, John Benjamins, Cambridge University Press, and Narr Francke Attempto. We also would like to thank the University administration for their advice and support, for long phone calls and for patiently answering many questions. Thanks are also due to our colleagues and student assistants who are helping us out during the conference (see the "End credits" page).

Last but not least, thanks to you all for coming to Düsseldorf and making this event a success. Cognitive Linguistics has come a long way from Duisburg 1989 to Düsseldorf 2023. In large part, the success of Cognitive Linguistics is certainly due to its vibrant community. We are happy and proud to bring this community together again.

Stefan Hartmann, Alexander Willich & Alexander Ziem

Preliminary remarks

ICLC16 is a huge conference with up to 14 sessions taking place in parallel. It is hardly possible to give a clear overview of the programme in a compact format, and we don't even try in this book of abstracts. The only purpose of the book of abstracts is to give you a compilation of all abstracts so that you can browse through it and find interesting talks or poster presentations without having to click through hundreds of individual abstracts.
For the conference schedule, we refer you to our website. There you can find a PDF of the schedule (with links to the individual abstracts), as well as an interactive list of podium presentations (without posters) that allows you to quickly find out where and when each talk takes place.

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The role of the usage-event in usage-based acquisition research

Heike Behrens
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In the past 25 years, the usage-based approach to language acquisition has revolutionized the field by showing how language learning is possible based on language use (e.g., Tomasello 2000). As far as corpus (= usage) data are concerned, the interplay between learning mechanisms and the affordances of the distributional properties of the input is a major research focus in order to identify the relevant properties and units when generalizing over the input data. There is abundant evidence by now that the input properties shape the developmental trajectories, leading to individual differences in the long-term outcome of language learning (e.g., Hart & Risley 1995, Dąbrowska 2019).

Less attention has been paid to the actual usage event, although this is at the heart of the theory:

> In usage based models of language … all things flow from the actual usage events in which people communicate linguistically with one another. The linguistic skills that a person possesses at any given moment in time - in the form of a "structured inventory of symbolic units" - result from her accumulated experience with language across the totality of usage events in her life. (Tomasello 2000: 61-2)

In this presentation I would like to shift the focus from implicit, data driven learning to observational and instructed learning in concrete interactions. What makes a usage event a learning or even teaching event? What can an interactionist perspective contribute to constructivist theories of language development (Behrens & Pfänder 2022)? What are the conditions under which children do not just learn *from* conversation, but *in* conversation (Veneziano 2018)? From the perspective of interactional linguistics, interactions can be characterized as participation frameworks (Goodwin 2007, 2017) against the backdrop of conversational gestalts (Holler & Levinson 2019; Stukenbrock 2020) that provide orientation for the overall organization of certain activities.

I will present data on a certain problem-solving activity at age 5 to 6 that stem from a longitudinal project on mother-child interactions, representing a large array of different interactional styles regarding maternal sensitivity, responsiveness, and contingency, as well as aspects like joint attention and commitment to the joint project. Of particular interest are structuring and feedback devices that lead to topic maintenance, which in turn manifests itself in more language use (number of turns, words) and more diverse and varied syntactic structures.

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Biases in language, cognition and linguists.

Alice Gaby
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Keywords: linguistic relativity, spatial frames of reference, metaphor

Humans the world over share a common experience of the world: we walk, we sleep, we eat and drink, we tell stories, we live on the planet earth and are subject to its gravitational force. But the 7000+ languages we speak vary in myriad ways. Of particular interest to cognitive linguists are structural parallels between the language a person speaks and their mental representation of the world. Some such parallels (such as the distinction between self and other being grammaticized as person distinctions in pronouns) are (near-)universal across speech communities, and can be attributed to language reflecting the basic architecture of our minds. But in other cases, we see marked differences between speech communities. Debates over whether these differences are attributable to language shaping thought, thought shaping language, or both language and thought being shaped by some external force, are as old as linguistics as a discipline.

This talk will review a range of evidence that language structures bias their speakers towards certain descriptions of the world they inhabit, and that these linguistic biases in turn feed and reinforce biases in cognition. Such biases might be seen in German speakers habitually describing spatial relationships using terms like *links* 'left', rather than *Ost* 'east', while the reverse is true for Kune speakers. Or the fact that English speakers think of *the generations ahead* as their future descendants, while for the Yanyuwa they are the ancestors. Or the fact that Kuuk Thaayorre speakers represent the flow of time from east-to-west but English speakers represent it from left-to-right. This talk will also consider a different kind of bias—the binary bias fed by the framing of the 'linguistic relativity' debate—which I argue impedes our understanding of language, cognition and the relationship between the two. Here I will reflect on how my understanding of my own (and collaborators') findings has evolved over time, arguing that the empirical data point to a more nuanced relationship between language and thought than a polarized debate can do justice to. There is no single cause that explains why reflexes of Proto-Paman **kungkarr* denote 'north' in Umpila, 'east' in Kukatj and 'northwest' (Kuuk Thaayorre); or why cardinal direction terms like these are used more frequently by some subpopulations (e.g. fishermen in the Maldives) than others; or why for many English speakers *north* is not interpreted as a cardinal direction at all, but rather denotes the direction extending forwards from the speaker's viewpoint. Each of these phenomena result from human attempts to resolve a multiplicity of competing cognitive and communicative pressures. Cumulatively, these studies point to the fact that Cognitive Linguistics as a field is strengthened by a diversity of perspectives, diversity in methods, diversity in researchers and diversity in languages studied.

Linguistic Creativity: Constructional networks in interaction

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Keywords: Construction Grammar, creativity, constructional network, productivity

Humans are an incredibly creative species – our minds have evolved to a degree that has enabled us to think original thoughts and come up with novel solutions to a great number of problems. One domain of human cognition that has recently received considerable attention in Cognitive Linguistics is linguistic creativity. Over the past couple of years, several publications have contributed new and interesting cognitive linguistic findings on the topic (e.g., Bergs 2018; Bergs and Kompa 2020; Hartmann & Ungerer fc.; Herbst 2018; Hoffmann 2018, 2019, 2020; Trousdale 2018; Turner 2018; Uhrig 2018, 2020). As I will argue, however, what is still missing, is a full-fledged cognitive model of linguistic creativity.

In the present talk, I will outline the aspects such a model. Starting with Glăveanu's (2013), 5A framework of creativity, I will show how each of the constitutive elements of creativity (actors, audience, artefacts, actions and affordances) can be interpreted in a Construction Grammar approach (Hoffmann 2022). Moreover, the model will detail the role of constructional networks (Diessel 2019) in creative acts and argue that Conceptual Blending (Hampe & Schönefeld 2003; Hoffmann 2019; 2022; Turner 2018, 2020) is the process that creates creative (as well as noncreative) constructs. Finally, I will illustrate the crucial role that social interactions between speakers and hearers play in creative acts.

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Perspective-taking, gesture spaces, and abstraction: What can signed languages contribute to cognitive linguistics?

Terry Janzen
University of Manitoba

Some of the first published analyses of signed languages as actual languages were made over sixty years ago (e.g., Bernard Tervoort 1953 for Nederlandse Gebarentaal (NGT or Sign Language of the Netherlands); William Stokoe 1960 for American Sign Language (ASL)). While at first meeting some resistance from linguists and educators (note Charles Hockett's 1963[1966] language design feature that language is necessarily produced vocally), their acceptance in linguistics as full-fledged languages is now firmly established. This has a significant impact, however, on what we understand language to be: the articulation of language is not restricted to the vocal tract but can co-opt other body parts, including arms and hands, facial gestures and eye gaze, and head and body postures, which numerous studies have shown to contribute to phonological structure in principled ways (e.g., Brentari 1998), not unlike that for spoken language, modality differences notwithstanding.

To say simply that signed languages are expressed via multiple body parts is, however, grossly insufficient if we are to understand what language is and what signers are doing, and it brings us directly to cognitive linguistics to address this, with its interest in body actions underlying image schemas and primary metaphors, blended spaces, viewpoint, and gesture. For spoken language (gesture aside), viewpoint is often clearly understood but yet invisible, something conceptualized, ascertained within (spoken) language structure. For signers, where everything is expressed visibly through the body—which once again, we must keep in mind, is formally considered as the collection of language articulators—viewpoint has literal bodily expression and importantly, the signer's body exists in a conceptually malleable space.

This, then, raises a number of questions equally relevant for both signed and spoken languages. First, are some of the signer's intentional, communicative body actions linguistic and others not? While we might consider "viewpoint" as a broad category term, I use "perspective-taking" to identify when a signer adopts the physical or conceptual (often, abstract) perspective of a viewer on some sort of scene (Janzen, in preparation), frequently as enactments (Ferrara and Johnston 2014; Saunders and Parisot, in press) of story characters within narrative structure or demonstrations. Are these enactments linguistic or simply gestural (if gestural here implies non-linguistic)? Researchers have begun to identify principled patterns of use within enactments (Janzen 2022; Saunders and Parisot, in press), and given Kendon's (2004) and Enfield's (2009) view of composite utterances in spoken/gestured language, it appears we have to ask the same question of spoken language. Second, if perspective-taking in signed language is visible body action, and signers' bodies interact with the spaces surrounding them, what is the architecture of that body-space relationship? How is it conceptualized by the signer? And third, do speakers do what signers do? Afterall, speakers and signers have the same brains and the same bodies, so it seems reasonable to expect similarities in embodied cognition and embodied language. And in this, studies on signed language and those on gesture seem to be converging, especially within the domain of cognitive linguistics.

In this session, we examine some of the theoretical questions on viewpoint and perspective-taking in signed languages and studies that have revealed aspects of the nature of the body-space relationship (here note Sweetser, in press), and in so doing we can learn much about language and cognition. We also look at the participation of the body in speaker/gesturers' discourse, and suggest that modality differences may not be as great as they have appeared.

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The Role of FrameNet in Frame Semantics, Construction Grammar, and Natural Language Processing

Kyoko Ohara
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In this talk I will discuss FrameNet (FN), an online language resource called FrameNet (FN), and similar language resources in other languages such as Spanish, Japanese, German, Swedish and Brazilian Portuguese. FN documents the meanings and usages of contemporary English words in terms of semantic frames, that is, background knowledge structures that speakers can access about various experiences associated with the words. I will focus on two aspects of FN: (1) its relations to the theories of Frame Semantics (e.g., Fillmore & Baker 2015) and Construction Grammar (e.g., Fillmore et al. 2012); and (2) its relevance to cognitive linguists in the age of deep learning.

After characterizing FN as a practical realization of Frame Semantics and Construction Grammar (e.g., Ruppenhoffer et al. 2016, Baker & Fillmore 2004), I will argue that the FN research and resource-building project has contributed extensively to advances in the two theories.

Next, I will show that FN has garnered attention in the field of natural language processing (NLP) (e.g., Gildea & Jurafsky 2002) and it will continue to gain further prominence for enhancing NLP technologies.

Finally, I will suggest that in the age of deep learning, collaboration between linguists and NLP researchers is both important and critical (cf. Bender 2020). Equally important and necessary is our continued qualitative description and analysis of linguistic data, since only linguists can develop hypotheses concerning speaker knowledge of language (cf. Fillmore 1992). Examining FrameNet data is a good place to start.

Merleau-Ponty and the intertwining of bodily experience and language

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I argue that proper attention to the philosophy of Merleau-Ponty can help resolve a long-lasting problem, with continued relevance for cognitive linguistics: the complex relationship between pre-verbal consciousness and language. My argument will be based on a reconstruction of the development of his thought on this topic, from the *Phenomenology of Perception* to his final writings. I show that from an initial standpoint where language was not differentiated from gesture, Merleau-Ponty moved under the influence of Saussure to distinguish the "diacritical", opposition-based, structure of the language system from the Gestalt-based nature of perception and bodily expression. Importantly, however, language as a system needs to be conceived as already "spoken language" (*langage parlé),* sedimented from living and expressive "speaking language" (*langage parlant*), the latter resembling modern conceptions of "languaging".

The dialectical relationship between the two, as well as the ultimately motivating role of non-verbal experience raises some questions, and I propose that these can be addressed by means of the *Motivation & Sedimentation Model* (e.g., Zlatev & Blomberg 2019; Devylder & Zlatev 2020; Moskaluk, Zlatev & van de Weijer 2022). This helps understand Merleau-Ponty's key concepts of *expression* and *sublimation* and seeing the two as "intertwined" resolves the paradox of their respective primacy. Further, the analysis helps clarify the claim often main in cognitive linguistics that language is fundamentally motivated rather than arbitrary. On the one hand this is so, and there is no sharp rupture between language and bodily experience. On the other hand, language is not reducible to such experience. The latter is an important point that is often forgotten in the field.

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Theme sessions

Ad hoc cognition and the Whorfian question: towards an experiential and situated model of language-thought interactions

Convenors: Panos Athanasopoulos, Monique Flecken & Norbert Vanek

Whorf fought the law (and the law won): Grammatical gender and COVID-19

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Keywords: Linguistic Relativity, Grammatical Gender, COVID-19

Introduction: There is ample evidence that speakers of grammatical gender languages tend to form stereotypical associations between gendered nouns and their referents (Boroditsky et al., 2003; Sato & Athanasopoulos, 2018; Mecit et al., 2022). Here, we assess the effect of grammatical gender in real-life situations within a legal context. In Greek, coronavirus is masculine and the resulting illness COVID-19 feminine, conforming to the grammatical gender of the terms 'virus' and 'illness' respectively. However, in natural usage the term COVID-19 occurs within both masculine and feminine grammatical contexts. The aim of this paper is to investigate whether the application of grammatical gender on noun phrases containing 'COVID-19' affects how legal experts and lay people apply punitive measures on breaches of laws aimed at ameliorating the spread.

Method: 769 Greek-speaking participants, divided by level of legal expertise into Controls (no expertise, N=212), Trainees (law students, N=355) and Experts (judges, attorneys, law academics, N=202) were asked to complete a survey presenting hypothetical breaches of real laws about pandemic related measures, divided into three types: Administrative (carrying a fine), Misdemeanour (carrying a short prison sentence) and Felony (carrying a long prison sentence). In a masculine grammatical gender context, the instructions and the questions contained masculine gendered noun phrases with the words 'coronavirus' and 'COVID-19', and in a feminine grammatical gender context they contained the words 'illness' and 'COVID-19' in the feminine form. Punitive measures varied in the severity of application on a 7-point Likert scale from least to most severe, and participants were asked to choose the appropriate fine/prison sentence for the respective breach.

Results: A 3(Expertise) x 3(Breach type) x 2(Gender context) mixed ANOVA with punitive measure choices converted to z scores as the dependent variable showed a significant triple interaction, $F(3.48,1327)=3.25$, $p<0.02$. Controls, but not Trainees and Experts, applied harsher punishments in masculine contexts for Administrative breaches and Misdemeanours, while all groups applied harsher punishments in masculine contexts for Felonies, with Trainees showing the least amount of bias. A subsequent analysis on scores obtained for noun phrases containing only COVID-19 in masculine and feminine grammatical contexts (i.e., without the words 'coronavirus' or 'illness') confirmed that the observed effects were indeed attributable to grammatical gender and not to the lexical semantics of specific terms (Expertise x Breach type x Gender context: $F(3.6,739)=3.67$, $p<0.01$).

Discussion: Our findings show that the grammatical gender context that a legal breach is presented in can be a powerful force in how people judge the severity of the corresponding punishment. Furthermore, the respondent's experiential history (defined here by level of legal expertise) also exerts a significant influence, as no effects of gender were found in Trainees and Experts except for Felonies, which involve considerable harm of perpetrator to victim and carry lengthy sentences. We discuss these findings in terms of frequency, saliency, and affect associated with the specific legal scenarios under investigation, which speak to the broader question of the mechanisms by which our language can creep into our judgments.

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Conceptual and grammatical gender at scale: Normative estimates across Czech and English

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Keywords: grammatical gender, conceptual gender, linguistic relativity, Czech, norms

The extent to which grammatical gender 'rubs off' on conceptual gender has provoked much discussion in the linguistic relatively literature (Samuel, Cole & Eacott, 2019), with mixed results depending on task and contextual constraints. At the core of most studies that investigate whether grammatical gender has an effect on the conceptual representation of gender are carefully controlled and selected stimuli, where word forms in a grammatically gendered language typically have either masculine, feminine or neuter forms, which can be compared to translation equivalent word forms from a control language that does not have grammatical gender. In our study, we take an exploratory approach to better understand the importance of stimuli for any studies aiming to test hypotheses related to linguistic relativity and grammatical gender by creating a large database of images and words that have been normed for conceptual gender association, which can be used to explore where grammatical gender does and does not influence the associated gender across different participant groups.

Our approach focuses on Czech - a language with grammatical gender, and English - a language without grammatical gender. We conducted a large-scale norming study, where native Czech (n = 731), native English (n = 299) and L1Cz-L2Eng (n = 521) speakers rated over 500 concepts taken from the Multilingual Picture database (Duñabeitia et al., 2022), which were presented both as words and as visual images in colour and in grayscale. Participants were presented with lists of words or images, presented in Czech for Czech participants, and in English for the English and L1czL2eng participants, and were asked to rate how they associated the meaning of the word/image in terms of how feminine-neutral-masculine it was, using a 7-point Likert scale (see Vankrunkelsven et al., 2022). All concepts were coded for grammatical gender in Czech (FEMININE/NEUTER/MASCULINE), animacy (ANIMATE/INANIMATE) and semantic category (ANIMAL/BODY/CLOTHING/FOOD/HOUSEHOLD/MUSIC/NATURE /OTHER/PEOPLE/PLACES/SPORTS/TOOLS/TRANSPORT).

We modelled the participant responses using cumulative link mixed-effects models (see Taylor et al., 2021), where the data was coded as an ordinal response, with a random intercept for participant and a random slope of condition (Czech/English/L1CzL2eng) on the item intercept. Three separate models were run – colour images, grayscale images and words, with each model providing an estimate of the latent gender association, and also with an estimate of the difference between the ratings across the three participant conditions, which we can then analyse to see which concepts, if any, differ based on the grammatical gender, animacy and semantic category. Unsurprisingly, our results show that for animates, the Czech and the L1czL2eng groups differ from the English condition, whereby the ratings are more congruent to the grammatical gender in Czech for both images and words, but this trend is not observed for inanimates. However, when we look at these patterns by the semantic categories, we can get a more nuanced picture, with ANIMALS, FOOD and PEOPLE all showing a trend towards grammatical gender congruency for images and words, but not for the other categories.

Whilst this is an explicit assessment of gender conceptualisation, we plan to use these stimuli to further ascertain whether grammatical gender effects can be observed in more implicit designs, such as in Sato and Athanasopoulos (2018).

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Aspectual proficiency predicts motion event categorization

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Keywords: Linguistic relativity, Motion events, Bilingualism

Research to date suggests that the grammatical category of imperfective aspect shapes cognitive and perceptual processing of motion endpoints (Athanasopoulos & Bylund, 2013; Flecken et al., 2015; von Stutterheim et al., 2012). Speakers of languages that lack grammaticized distinctions of imperfectivity (e.g., German and Swedish) have been shown to mention, pay more attention to, and categorize motion on the basis of endpoints. Conversely, speakers of aspect languages (e.g., English, Russian, and Spanish) tend to focus on the ongoing phase of motion, thus relegating endpoints to the background. It has been suggested that these crosslinguistic differences obtain because the category of imperfectivity forces speakers to habitually assume an immediate, or zoomed-in, viewing frame of events, according to which endpoints are excluded (Langacker, 2002). Speakers of non-aspectual languages, in contrast, typically assume maximal viewing frames of events, in which endpoints are included.

So far, the evidence from this line of research is mainly of a correlational nature, in the sense that comparisons between different speaker/language groups constitute the primary source of evidence. Capitalizing on the methodological advantages afforded by the study of bilingualism, the present study sets out to probe a direct link between imperfective aspect and endpoint categorization. A group of 80 adult bilinguals with Spanish (+ imperfective aspect) as first language and Swedish (– imperfective aspect) as a second language (with residence in Sweden) took part in the study. A grammaticality judgement test of imperfective contrasts in Spanish was administered to the participants in order to obtain a measure of their proficiency with aspectual distinctions. To assess their cognitive behaviour with motion endpoints, a similarity judgement task was implemented, asking participants to match scenes of motion events with intermediate degree of endpoint orientation (i.e., motion directed towards a potential, but not reached, endpoint) with scenes showing either low degree of endpoint orientation (motion with no endpoint in sight) or high degree of endpoint orientation (motion with reached endpoints). It was predicted that lower proficiency with aspectual contrasts would be associated with an elevated preference for matching intermediate endpoint motion with high-endpoint motion.

Results indeed confirmed such an association, showing that the less proficient the participants were with imperfective contrasts, the more likely they were to exhibit a predilection for high degrees of endpoint orientation in the categorization task. In other words, not detecting the immediate viewing frames conveyed through imperfectivity morphology went hand in hand with a lower preference for adopting immediate viewing frames during event categorization. These findings provide a new type of evidence on the link between grammatical aspect and motion event cognition, strengthening previous findings on the role of aspectual contrasts in event construal. Crucially, the findings also suggest that the experiential variable of bilingualism may modulate language-induced cognitive preferences in the individual.

Ad Hoc Whorf: How language shapes minds on three time scales

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Keywords: Linguistic relativity, Ad hoc cognition, Context

According to the Ad Hoc Cognition framework (Casasanto & Lupyan, 2015), our minds are continually being shaped by the contexts in which we use them. Language is a highly systematic, nearly ubiquitous part of the context in which we use our minds. Therefore, language should exert a continual shaping effect on cognition. Why, then, do most studies of linguistic relativity demonstrate stable changes in speakers' thinking that correspond to enduring features of their languages?

This apparent paradox between linguistic relativity and Ad Hoc Cognition can be resolved if we posit that the contexts in which we use our mind can be either sources of change or sources of stability. When aspects of the context are stable, then aspects of the mind that depend on them are also stable; when aspects of the context change then aspects of the mind that depend on them may change accordingly. According to the Ad Hoc Cognition framework, the languages we speak (like other aspects of the context) should shape our thinking on at least three overlapping timescales ranging from milliseconds (i.e., activation dynamics) to minutes (i.e., local context) to lifetimes (i.e., experiential relativity; Casasanto & Lupyan, 2015).

Linguistic relativity effects operating on the shortest timescale are the most obviously compatible with Ad Hoc Cognition. For example, color words appear to influence color judgments, but only when experimental participants are allowed to activate lexical representations in the moment, during the task. When participants performed a concurrent verbal interference task they no longer showed language-specific patterns of color judgment (Winawer et al., 2007). These results suggest that language has not permanently warped speakers' perceptual color space; rather, lexical categories influence the construction of color categories online, in the moment that colors are being perceived and classified.

Linguistic relativity effects operating on the longest timescale present the greatest apparent challenge to Ad Hoc Cognition. For example, adults represent musical pitches consistent with the spatial metaphors in their native languages, even during non-linguistic tasks. Dutch speakers conceptualize pitches as high and low, whereas Farsi speakers conceptualize them as thick or thin (Dolscheid et al., 2013). Language-specific pitch representations persist despite verbal interference, suggesting that linguistic metaphors' effects on the mind are long-term, not online. But are these effects immutable? Further studies show that training Dutch speakers to use Farsi-like pitch metaphors in the laboratory causes them to conceptualize pitches as thick and thin (presumably transiently), like native Farsi speakers.

Together, these studies show that when the linguistic context is stable, language-specific patterns of conceptualization also appear stable. But when the linguistic context changes – either because language has been temporarily disabled (in the case of color) or because new patterns of linguistic experience have been introduced on a timescale of minutes to hours (in the case of pitch) – speakers' conceptualizations reflect these short-term changes. The ad hoc nature of our mental representations can be revealed by manipulating aspects of our linguistic experience that are ordinarily unchanging.

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Event descriptions, task demands and memory for event duration.

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Keywords: event memory, language, time

Prior research on memory for event duration suggests that retrospective duration judgments depend on the number of event segments perceived at encoding (Faber & Gennari, 2015). When recalling past experiences, events with more segments are judged longer than those with fewer segments. Here, we examine whether event descriptions would bias the representations of events and their duration. Prior research suggests that language production, but not other tasks, may call attention to certain aspects of an event and, thus, may bias the event representations retrieved from memory (Papafragou et al., 2008, Sakarias & Flecken, 2021). We, therefore, hypothesised that attention driven by task demands might mediate language effects on memory.

In a series of studies, participants first learned 21 novel animated events showing geometric figures moving, as in Wang & Gennari (2019). A stimulus video showed, for example, a square moving up on the screen. Stimulus duration varied from 3 to 9 sec. To guarantee that animations were remembered well, the stimulus set was seen three times (each time in a different random order). A distraction task and a memory test followed learning. Representations of event duration were measured with an event reproduction task (replaying the animations in the mind's eye). An animation frame prompted participants to mentally replay each animation. Button presses at the start and end of the mental reproduction provided an index of event duration.

We manipulated two main factors: (1) Each animation during learning was either untitled or preceded by a descriptive title. The titles also varied in meaning: they either imply fast or slow motion. E.g., "a Chinese lantern raising up into the sky" vs "A firework rocket being launched" preceded the animation with a square moving up. The title thus changed the conceptualisation of the animations. (2) Learning instructions differed in that they advised participants to attend to the animations' events and either read or study the titles. We predicted that if language modulates duration reproductions irrespective of task demands, animations with fast-titles should be shorter than those with slow-titles, and these should differ from the untitled condition.

Results indicated that when titles were studied, fast-title animations elicited shorter reproductions than slow-title animations, and these differed from the untitled condition. When titles were not specifically studied, no effect of language was observed, even though the titles provided information about the nature of the objects (e.g., lantern vs rocket). These results suggest that language influences on memory for event duration are mediated by attention.

These results align with others in the literature (Loftus and Palmer, 1974, Wang and Gennari, 2019), showing that language does modulate memory-based judgments or duration reproductions when language prompts recollection. Together, these findings suggest that when task demands foreground language, they are likely to bias recollection. In contrast, when language simply accompanies event understanding, it might not bias memory as much. Possible underlying mechanisms are discussed.

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Skin cancer probability assessment and the grammaticalization of the future: the role of epistemic modality

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Keywords: grammaticalization of the future, likelihood estimation, future time reference, epistemic modality

The way we think about future events may be influenced by the way the future is grammaticalized in language. However, experimental investigations have not yet found sufficient evidence to support this claim (e.g., Jäggi et al. 2020). Rather than simply considering whether a language uses future tense to mark the future, Robertson & Roberts (2023) recently suggested testing epistemic modality of a language which marks probability or likelihood.

This notion is applicable to research in health communication, as its goal is to effectively communicate health-relevant (future) outcomes. The aim of this study was to assess the role of the grammaticalization of the future and epistemic modality in the context of effective health messages for skin cancer.

Concretely, we conducted two experiments where we presented participants with narratives that varied in terms of verb tense and epistemic modality. Participants' perceived cognitive (Experiment 1) and affective (Experiment 2) likelihood of developing skin cancer were assessed. In Experiment 1 (cognitive likelihood), we found a main effect of epistemic modality. In Experiment 2 (affective likelihood), we found a main effect of verb tense. We discuss the results in terms of the significance for the theoretical framework and applied research in health psychology.

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Perceiving colour through the language lens: a systematic review of experimental work on linguistic influences in colour perception.

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Keywords: colour perception, systematic review, language and perception, language and cognition

We systematically review experimental papers published in the last twenty years on how language affects the perception of colour. This effect is often referred to as a Whorfian Effect as it originates in Whorf's theory of linguistic relativity (1956), showing how specific language terminology (for colours) can influence how speakers of that language perceive colours. The research into the interaction between language and colour perception has been carried out with a wide range of methods and experimental paradigms, which has resulted in contradictory findings. A structural overview of the methodology used in the experimental work on this topic, and its results, is still lacking. Such an overview can help us understand some of these contradictory findings and suggest ways forward in this domain. Therefore, we will review the state-of-the-art and identify methodological gaps and (in)consistencies in the experimental work on this topic. Our review considers almost 150 experiments on approximately 5000 participants. In order to structure the review, we group the experimental work into two main approaches taken: studies following the first approach aim to establish an effect of language on perception, and discover the extent to which it is, for example, an effect of specifically *linguistic* nature. In this 'illustrative' approach, studies investigate under which conditions a linguistic effect on perception is observed and under which it is not. For example, the extent to which, and conditions under which, different native language experiences affect how someone perceives a certain colour for which they do or do not have a colour term (Winawer et al., 2007). Other examples of such studies are those that engage in disturbing the ability of participants to access language, to shed light on the role of verbal retrieval during perception as necessary for such effects to arise, such as in studies using a verbal interference manipulation (Roberson & Davidoff, 2000).The second approach concerns studying the cognitive and neural mechanisms behind language-perception interaction for the domain of colour. Examples of studies in this 'mechanistic' approach are those that attempt to find neural correlates of linguistically-driven categorical perception of colour (Fonteneau & Davidoff, 2007), or those that aim to determine whether language affects perception at early or at late processing stages (Athanasopoulos et al., 2010). For each of the two approaches, we identify the main research questions that are being studied in the sample of papers, and we will review the methodological choices through which language-perception interaction has been studied. With this review, we aim to develop suggestions for future research about which manipulations and paradigms appear to be robust and fruitful to pursue, to render a clear picture on language-perception interaction. Further, we also aim to identify missing research questions in this field.

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Transient and lasting linguistic influences on visual perception: shifting brain dynamics with memory consolidation

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Keywords: Categorical Perception, Memory Consolidation, Linguistically Modulated Perception, EEG

Evidence accumulates that language influences perception (Lupyan et al. 2020). For instance, if two objects or colors are called differently, they stand out more against each other (Maier et al. 2014; Maier & Abdel Rahman 2018). This categorical perception effect can improve discrimination and even conscious detection of stimuli that straddle a linguistic category boundary (Maier & Abdel Rahman 2018; Regier & Kay 2009). Still, the neurocognitive dynamics of linguistically modulated perception are not yet well understood. Does language influence visual perception through transient online modulations or by inducing lasting changes to visual mental representations?

We used EEG to test how effects of newly acquired linguistic categories differ before versus after memory consolidation during sleep. In two experiments, participants learned to associate unfamiliar objects with new category labels. They then performed a visual search task in which they indicated the position of one deviant object displayed together with eleven identical distractors (left vs. right visual field). In Experiment 1, there was a two-day break between category learning and the visual search task, allowing for memory consolidation of object labels and their association with objects. In Experiment 2, the visual search task immediately followed the learning routine, strongly limiting memory consolidation. Reaction times and single trial amplitudes of event-related potential (ERP) components reflecting low- and high-level vision (P1 and N1 component), as well as attentional selection (N2 component) were analyzed with linear mixed models.

Faster reaction times for between- compared to within-category trials confirmed a behavioral categorical perception effect. ERPs revealed distinct neural dynamics of categorical perception before vs. after memory consolidation, which were largely restricted to the right visual field, tying the effects to left-hemispheric language structures of the brain. Directly after category learning, N1 amplitudes were larger in within-category search trials. Thus, language can influence visual processing almost instantaneously, with limited memory consolidation. Then, visual processing dynamics shifted significantly and became more varied with memory consolidation. The N1-effect switched polarity, with larger amplitudes in between-category search trials, such that it aligned with the canonical “visual mismatch negativity” effects reported in studies using familiar stimuli well-established in long-term memory (Boutonnet et al. 2013; Thierry et al. 2009). In addition, an even earlier effect in the P1 component emerged only with memory consolidation, suggesting increased efficiency or automaticity of linguistically modulated perception. A category effect also emerged in the N2 component, suggesting that increased attention to between-category targets comes with consolidation.

Our results show that memory consolidation is a crucial factor shaping how linguistic categories modulate perception. We interpret these shifting dynamics to reflect fast transient modulations of configural visual processing at first (N1), and more lasting effects on various stages throughout the visual processing stream, including low-level feature processing (P1) as linguistic knowledge settles into memory. Language appears to induce both, instantaneous transient modulations, as well as long-term changes to visual perception. In line with previous evidence, including inter-area connectivity observed with fMRI (Schmidt et al. 2019), we propose that language- and sensory areas of the brain form networks to instantiate combined visuo-linguistic representations that are long-lasting and efficient, but can still be interfered with if language is disrupted (e.g., with verbal interference; Winawer et al. 2007).

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Music to my ears (and fingers): Investigating causal effects of verbal vs. musical labels on tactile discrimination.

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Keywords: Language, Perception, Linguistic Relativity

Can language affect the nature of our perception? How much of our perception is shaped by our own language? These questions were investigated using a controlled, within-subject experimental design, where participants learned the discrimination of fine-grained, difficult-to-distinguish tactile patterns on their fingertips with pseudowords or tone sequences. Their discrimination ability was tested both before and after the associative learning, to test if there was any difference in their discrimination abilities related to the co-presented linguistic or musical stimuli (Miller & Pulvermüller, in prep).

Previous research (Miller et al. 2018; Schmidt et al. 2019) showed that associating specific irrelevant meaningless verbal label with almost indistinguishable tactile stimuli made these easier to discriminate. This raises the question whether this facilitatory effect is specific to verbal language, or might arise with other stimuli too. To address this question, we used tactile patterns, and paired them either with verbal, language-like labels or with matched musical sequences, testing participants' ability to discriminate the tactile patterns both before and after. Tactile patterns were divided into two equally matched sets, and each set was presented systematically and consistently with unique, but task-irrelevant, auditory stimuli. All participants had equal exposure to all verbal and nonverbal stimuli as well as all tactile patterns throughout the study.

After five days of learning and exposure, participants showed an overall discrimination improvement in both categories, indicating that this facilitative effect is not limited to creating implicit associations between tactile patterns and verbal labels. There was, however, a significantly greater improvement for patterns, which were paired with verbal labels when compared to the patterns paired with non-verbal, tonal sequences, indicating that spoken language may still have an advantage over non-spoken auditory input.

While it is assumed that both language-like and tone sequences would active primary auditory cortex, it is possible that verbal labels lead to larger and more widespread activation patterns than tonal labels. Whereas the traverse temporal gyri have been shown to be active during tone processing, the fact that pseudo-words consist of pronounceable phonemes could mean that they activate not only primary auditory cortex but more widespread areas of the perisylvian language cortex, including prefrontal areas. Coactivation and thus the eventual subsequent strengthening of reciprocal connections between auditory and articulatory circuits means that upon hearing pronounceable pseudo-words, not only primary auditory cortex will be activated but also inferior frontal areas. Though we did see overall learning effects for both language-like and tone pairings, this advantage for the 'pronounceable' stimuli may explain why we saw a larger improvement in discrimination among tactile stimuli, which were paired with the language-like stimuli, as compared to the tactile stimuli paired with the non-verbal tone stimuli.

These results also demonstrate that cross-modal associations can be facilitative for difficult, fine-grained discrimination. However, associations formed with verbal, language-like stimuli lead to a greater improvement than associations with non-verbal tone stimuli. This could indicate that, while facilitation effects may generalise to other types of cross-modality associations, language associations under the same conditions as non-language associations still lead to superior improvement.

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Verbal and nonverbal cueing in olfactory categorisation: Are words unique?

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Keywords: Odour categorisation, Perceptual learning, Linguistic relativity, Olfactory cognition, Verbal and nonverbal cues

Are words special for category learning? Or can other cues in the environment help activate knowledge in similar ways? The enhancement of forming new categories with words, but less so with nonverbal cues, is known as the label advantage (Lupyan & Bergen, 2016). Previous studies in the visual domain suggest that verbal labels could indicate category membership more effectively than nonverbal sounds (Lupyan & Thompson-Schill, 2012). This study investigated the status of verbal labels in learning categories in the olfactory domain. We designed three experiments to investigate how successfully people learn odour categories with variations in cueing. In Experiment 1, we trained native Czech speakers (n = 44) to sort difficult-to-identify olfactory stimuli with Czech pseudowords (e.g., fralíst). In the CONCORD condition, participants were learning olfactory categories in the presence of consistently paired pseudowords (81%), and in the DISCORD condition, participants had equal exposure to the same, but inconsistently paired (25%), set of stimuli. Initial categorisation success was at chance level in both groups. After training, a test without labels showed that the concordant group increased their correct categorisation more successfully (MCON = 70.01%) than the discordant group (MDIS = 57.39%). To further examine the label advantage, in Experiment 2 we tested whether the nature of task-irrelevant verbal cues matters. We compared new CONCORD and DISCORD groups of Czech native speakers, whom we exposed to foreign-sounding labels that conformed to English phonotactics (e.g., bitjeed). Like in Exp.1, greater categorisation improvement emerged in the CONCORD group (MCON = 66.79%) than in the DISCORD group (MDIS = 61.74%). Word-like labels, irrespective of whether they follow the phonotactic principles of the native language, provided a greater boost to odour category formation than nonverbal cues. One explanation is that labels fine-tuned perception by channelling attention to category-relevant perceptual features (Smith et al., 2002). An alternative account is that participants became perceptually sensitised to odour distinctions through attribute differentiation (Goldstone & Steywers, 2001). Categorisation abilities also improved without implicit odour-label associations, albeit to a lesser extent than in contexts where labels could serve as reliable categorical cues. In Experiment 3, we were interested in testing whether participant performance increases when odours are paired with nonverbal cues (structured noise devoid of speech-like qualities). After four days of intensive training, categorisation improvement was negligible when sound-odour pairing was consistent (MCON = 55.49%). Accuracy in the final test was unexpectedly higher for DISCORD (MDIS = 64.58%). The debriefs suggested that this result may be attributable to participants' deliberate inattentiveness to sounds, and enhanced focus purely on the odours, after they had realised the pairings were unreliable category indicators. An independent smell discrimination ability test (Hummel et al., 1997) helped to ensure that superior learning gains in the CONCORD groups with words were unrelated to participants' olfactory function because smell discrimination ability was comparable across experimental groups. In sum, our findings bring new evidence from the modality of olfaction, showing that words can achieve what nonverbal cues cannot, and they thus enjoy a special status in cross-modal associative learning.

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Title.
Glorp is plipping: verbal labels facilitate novel event learning

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Keywords: Event cognition, learning, language

Perceiving and understanding the activity happening in the world around us is something that we have to deal with constantly. Our brains segment this activity stream into meaningful units with beginnings and endings, which we call events, e.g., cooking dinner, smoking a cigarette and fishing (Radvansky & Zacks, 2017). We experience these events not only through perception and action, but also through language: we talk to our friends about our weekend plans, write about our day in a journal or read the latest news in the paper. Yet, we do not fully understand how language contributes to our event cognition. This study focuses on the role of language for how we learn about novel events, in this case, structured sequences of unfamiliar actions, that we encounter. A facilitating role of labelling for object (category) learning has been reported for infants and adults in experimental settings involving learning sessions (LaTourette & Waxman, 2020; Lupyan, Rakison & McClelland, 2007), evidencing as stronger categorical object representations measured in perceptual tasks and memory paradigms. Here, we expected to see a learning advantage for novel events: In particular, labelling novel events with a verbal label (e.g., plipping) was expected to lead to a more robust representation of the inner structure of the event, i.e., the temporal order of the actions involved, their sub- and end-goals. We report an experiment in which participants were trained on novel events involving an alien engaged in a sequence of activities, presented to them in short animations. During the learning phase (consisting of three different learning tasks), one group of participants received novel verb labels, such as plipping, greeling, whereas the other group received non-verbal labels (event 1, event 2). A day later, participants performed an oddball detection task in which they were presented with the same animations, but in some animations a sub-event appeared in the incorrect place in the overall sequence (hard oddball condition). In other cases a subevent from a completely different event (easy oddball condition) appeared. The hard oddball condition was designed to show a possible verbal labelling advantage as it tapped into people's representation of the events' inner temporal structure. Participants were instructed to press a button as soon as they spotted a subevent that was out of place, and their response times were measured. Results showed that the novel verb-label group overall had significantly faster reaction times in the oddball detection task, and that both groups were faster to detect easy than hard oddballs. There was also an interaction between group and condition: the difference between easy and hard oddballs was smaller for the novel verb-label group than for the non-label group, showing that verbal labelling had a specific benefit in relation to hard oddballs. We interpret these results as indicating that verbal labelling can play a facilitating role in event learning.

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Constructional perspectives on motion event encoding: language typology, usage, and acquisition

Convenors: Karin Madlener-Charpentier & Elsa Liste-Lamas

Constructional variation in the encoding of PATH and GROUND information in child-adult interaction in L1 German

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Keywords: acquisition of L1 German, PATH encoding, pleonastic constructions

Background: German as a satellite-framed language (Talmy 2000) provides speakers with a variety of constructions for the expression of PATH information outside the verb, e.g., prepositional phrases (PP) (1) or directional particles (2):

(1) *Das Mädchen rennt [in das Haus]*$_{PP}$. lit.: 'the girl runs into the house'
(2) *Der Junge rennt [rein]*$_{v\text{-}part}$. lit.: 'the boy runs there-in'

However, a less common and mainly colloquially used lexicalization pattern has not been topic to research in greater detail, namely pleonastic constructions (PLEO). The specificity of PLEO is in the duplication of the PATH information in both a PP and a semantically-congruent locative or directional particle (underlined in example 3):

(3) *Die Kinder rennen [in das Haus rein]*$_{PLEO}$. lit.: 'the children run in the house into'

Constructions (1)-(3) show different degrees of complexity in terms of their structural properties and informativeness. To verbalize spatial settings in a pragmatically adequate manner, children are required to learn the subtle differences between such closely related construction types. However, not much is known about the interplay of different PATH constructions in spatial language acquisition.

Aims of this study: This study aims at filling this gap by exploring PLEO as part of the German PATH inventory and their role in children's way towards an adult-like usage of PATH constructions. Quantitative and qualitative approaches are combined to answer the following research questions: i) How frequent are PLEO in spontaneous child (directed) speech in German? ii) In how far are PLEO used in naturalistic child-adult dialogue to co-construct motion event descriptions across turns? The methodology draws on constructionist (Goldberg 2005) and usage-based approaches (Behrens 2009) by taking different levels of abstractness and the input language into account.

Data and analyses: Longitudinal corpora with a total of 193'052 utterances from 3 monolingual German children (observation time: 2;0-7;11) in interaction with their caregivers are analyzed (Rigol-Corpus, Lieven & Stoll 2013). To answer i), all instances of PLEO and non-pleonastic constructions (PP and locative/directional particles) are identified and compared in terms of their frequency in the course of development. Question ii) is addressed by detecting patterns of constructional variation between PLEO and other means for PATH encoding in dialogic contexts.

Results: Preliminary results on selected parts of the data show that children make use of PLEO from early on (age 2;0) and that the proportion of PLEO and non-pleonastic constructions is similar to adults. Children's use of PLEO becomes more creative in the course of development, that is, they use more different slot fillers with age. The discourse analysis reveals that the use of PLEO is often conjoined by particle constructions in preceding or succeeding turns referring to the same motion scene. This indicates that maximally-informative PLEO seem to be extended or reduced to semantically and syntactically less dense particle constructions.

Relevance: The acquisition of the complex system of PATH constructions in German has been described as challenging (Bryant 2012). This study may add to a better understanding of how children expand their constructional inventory in accordance with their input language, and how constructional choices are furthermore influenced by discursive factors. Moreover, the findings may contribute to authentic and learner-oriented intervention material in order to support children's proficiency in spatial language – an essential skill predicting mathematic thinking and understanding (Möhring et al. 2021).

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Redefining the link between the caused motion and the resultative construction in German

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Keywords: Construction Grammar, motion, caused motion construction, resultative construction, German

The analysis of the caused motion construction (CMC) and the resultative construction (ResC) is a central topic in Construction Grammar (compare Goldberg 1995, 2006; Goldberg & Jackendoff 2004; Boas 2003, 2011; De Knop 2020). Starting from Goldberg's (1995) claim that the resultative construction is a metaphorical extension of the CMC and Goldberg & Jackendoff's (2004) description of path and property resultatives, the presentation will focus on the German CMC and ResC with directional verb particles and/or prepositional phrases (see fig. 1, Gallez 2020) by first providing a fine-grained description of the constructional elements (verb, object, oblique argument) and their interaction. It will further show that the analyzed German constructions are situated on a motion-result-continuum (see fig. 1).

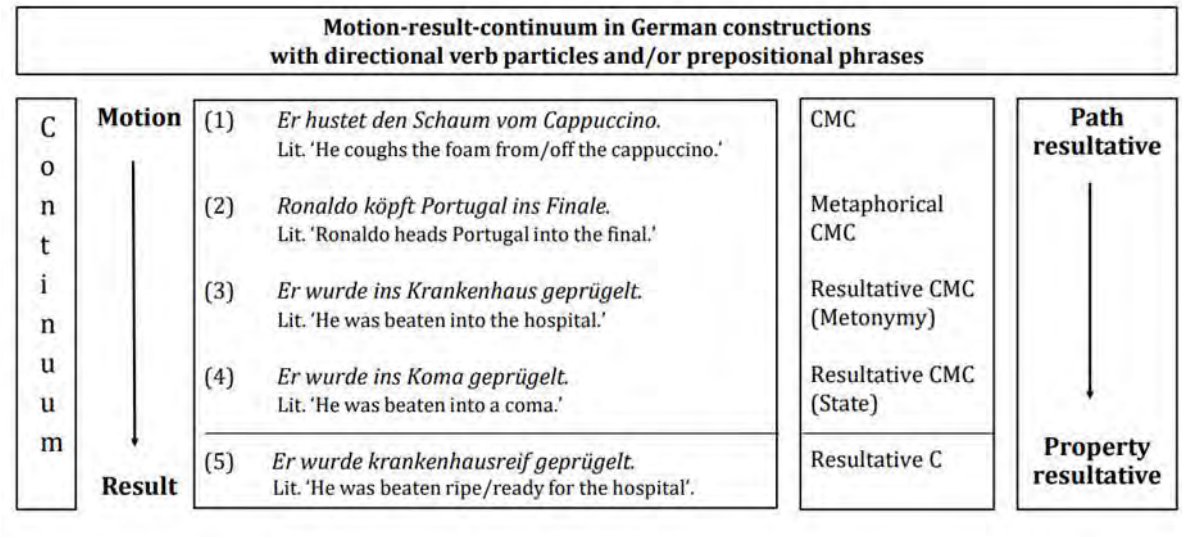

Fig. 1: Motion-result-continuum (Gallez 2020: 43)

Building on examples from a user-designed press corpus of the Leibniz-Institut für Deutsche Sprache in Mannheim (DeReKo) and on additional items from German press articles extracted via Google News, this presentation will demonstrate how both concrete motion verbs and non-motion verbs (e.g. *husten* 'to cough', *prügeln* 'to beat' in fig. 1), concrete and abstract selected and unselected objects (Goldberg & Jackendoff, 2004) contribute to the meaning of a (metaphorical) motion or resultative construction. The presentation will also provide evidence for the predominant role of the oblique argument in the constructional meaning. This argument can express a location (*Cappuccino*), a metaphorical goal (*ins Finale* 'into the final'), a state (*ins Koma* 'into a coma') or even a time. The detailed description of the instances of the construction reveals how the constituents' interaction in and with the construction determines the position of these constructions between the two poles of the motion-result-continuum presented in fig. 1. Moreover, the examples will illustrate that the manner salience in German (see a. o. De Knop & Gallez 2011) allows for a great variety of closely related constructions expressing metaphorical or real motion.

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Lexicalization patterns for the expression of motion and localization in German: an embodied teaching approach.

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Keywords: Embodied Teaching, Foreign Language Learning and Teaching, German, motion and localization

Our paper focuses on two typical expressions of motion and localization in German: the caused-motion-construction (Germ. *Er hustet die Postkarte vom Tisch* – lit. 'He coughs the post card off the table') and noun-verb-phrases with posture verbs (Germ. *Sie stehen unter Beobachtung* – lit. 'They stand under observation'). These two patterns are particularly challenging for French-speaking learners of German, because of the typological differences between the two languages. Indeed, in French, there is no one-to-one equivalent for the German caused-motion construction (hereafter CMC) (see a. o. De Knop & Gallez 2013) and French posture verbs are only used to express concrete positions (see a. o. De Knop & Perrez 2014).

These typological differences make therefore both patterns highly interesting for Foreign Language Learning and Teaching. De Knop (2020) has pointed out that 'embodied teaching' might contribute to making the learning of such expressions more efficient: On the one hand, the motion expressed in CMCs can be perceived through visualization or gestures and, on the other hand, the use of posture verbs in more abstract expressions can be linked to their original concrete-physical meaning.

In this contribution, we follow this avenue and present the results of an exploratory study conducted in 2021 with French-speaking students from three Belgian universities. The aim of this study was to explore the extent to which embodied teaching might help improve the understanding of the two lexicalization patterns. Our talk will first describe our intervention by showing how we taught these patterns with images, animations and references to bodily experiences. Then our innovative testing method will be presented. As already observed by Llopis-García (2021), many empirical tests conducted so far are based on traditional teaching methods, since they rely on formal tasks (fill-in-the-blank, etc.). Therefore, we propose a methodology in which embodiment is implemented not only at the teaching level, but also at the level of the testing. In our study the students had to answer the questions of the pre- and posttest in an 'embodied way' by depicting the CMC-scene with a drawing and by explaining the use of posture verbs by referring to bodily experiences.

The results of our quantitative and qualitative analyses were very promising: embodied teaching does not only contribute to a better understanding of the German CMC and noun-verb-phrases with posture verbs. The students were also able to extrapolate their 'embodied reasoning' to new examples and to use their 'constructional competence' more efficiently. They adopted conceptualization strategies and applied them to concrete-physical but also to abstract patterns.

In addition to the discussion of the results, we will also address some methodological challenges and present some perspectives for further research.

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A contrastive study of Germanic satellite-framed languages: The role of prepositions, postpositions and morphosyntactic case-marking

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Keywords: satellite-framed languages, prepositions vs. postpositions, morpho-syntactic case-marking

Dutch, English and German belong to the class of Germanic languages which, in typological terms, have been defined as satellite-framed languages (Slobin 2017; Talmy 2017). They express the path of motion preferably with satellites and the manner dimension in the main verb. Although these three languages belong to the same typological class, they differ in the way in which they realize these dimensions. With examples from the Sketch Engine our study aims to propose a more fine-grained description of the three Germanic languages and to show how expressions of motion and location are further dependent on morphosyntactic, semantic and pragmatic factors, thereby realizing the satellite-framed pattern in a more or less prototypical way (Ibarretxe-Antuñano 2017). More specifically, we will show how English has the possibility to make a difference between location and motion along a path with the use of different prepositions like *in, on* (location) vs. *into, onto, upon* (motion along a path), e.g. (1) *He is in the room/on the mountain* vs. (2) *He runs into the room/upon the mountain*. By contrast, in German, one and the same preposition can be used to express a location or a motion, as exemplified by the equivalent sentences (1a) *Er ist in dem Zimmer/auf dem Berg* (location) vs. (2a) *Er läuft in das Zimmer/auf den Berg* (motion). Still, the difference between both events is expressed, but with morpho-syntactic case-marking after the two-way prepositions, i.e. with the dative case for location (see 1a) and the accusative case for motion (see 2a). Dutch does not have case-marking but word order plays a predominant role: prepositions contribute to the expression of location whereas postpositions with the same form are used for motion along a path, e.g. (1b) *Hij is in de kamer/op de berg* vs. (2b) *Hij loopt de kamer in/de berg op* (Draye 1992; Leys 2014; Van Belle 2016). German has a similar construction as Dutch (2b) with "anadeictic particles" (Ágel 2017) as in (2c) *Er läuft in das Zimmer hinein/auf den Berg hinauf* (lit. 'He runs into the room into/on the mountain upon'). This is only possible with "pleonastic directionals" (Olsen 1996) where the expression of path is expressed twice: in the preposition introducing the noun phrase in the accusative and the following anadeictic particle.

The presentation will further zoom in onto so-called German "verbless directives" (Jacobs 2008), e.g. (3) *Ab ins Bett* (lit. 'off into the bed') or (4) *rauf auf den Berg* (lit. 'upon onto the mountain'), which are common in oral German speech but hardly used in English or Dutch. They constitute the prototypical instantiation of the satellite-framed pattern as they only consist of a nominal phrase with satellites. This is possible thanks to the complex interrelation of case-marking in German and the broad variety of prepositions and (deictic) particles for the expression of motion, e.g. (4) *rauf*[deictic part.] *auf*[prep] *den Berg*[accus.]. From a pragmatic point of view, these constructions express directive speech acts and are often accompanied by gestures.

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Running across the mind or across the park: Does speech about physical and metaphorical motion go hand in hand?

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Keywords: physical motion, metaphorical motion, crosslinguistic variation

Expression of physical motion (e.g., *girl crawls over carpet*) shows systematic variability not only between language types (i.e., inter-typological) but also within a language type (i.e., intra-typological). Inter-typological variation becomes evident for both packaging and lexicalization of motion elements[1,2]. Satellite-framed language (S-language) speakers rely more on conflated strategies, expressing manner in the verb and path in a satellite associated with the verb within a single clause (e.g., English *run into the house*). Verb-framed language (V-language) speakers, on the other hand, opt to rely more on separated packaging strategies, with path and manner expressed in separate clauses (e.g., Spanish: *entrar en la casa corriendo* = enter into house by running). The intra-typological variability becomes evident largely in the lexicalization of motion, particularly with respect to the extent and diversity with which path and manner components are expressed either in the verb or in a secondary motion element.[3]

In this study, we asked whether the patterns of inter-typological and intra-typological variability remain similar in physical motion (*man runs through the park*) and metaphorical motion (e.g., *idea runs through the mind*) events. To investigate this question, we randomly extracted 450 physical motion (150/language) and 450 metaphorical motion (150/language) descriptions from novels originally written in German, Polish—both S-languages, and Spanish—a V-language. We utilized a two-pronged approach by focusing on both packaging strategies (i.e., conflated, separated) speakers employ in arranging manner and path components of motion and lexicalization strategies that become evident in the more detailed aspects of the motion event description (i.e., choice of manner vs. path verb, inclusion of secondary motion elements encoding manner or path).

Our results showed strong inter-typological differences in the expression of both event types: German and Polish writers (both S-languages) differed from Spanish (V-language) writers: they used more conflated packaging strategies and more lexicalization of manner in the verb than Spanish speakers, while Spanish writers used more separated strategies with more lexicalization of path in the verb than both German and Polish writers. The strong inter-typological differences were accompanied by more modest intra-typological variability, largely limited to metaphorical events, with Polish speakers expressing a greater diversity of manner verbs in their descriptions than German speakers. Our findings thus provide evidence for a robust inter-typological pattern across both motion event types, accompanied by a relatively less robust intra-typological pattern that varies by event type (i.e., metaphorical motion)—highlighting event type as an important factor in understanding crosslinguistic variation in the expression of motion.

Overall, our study provides a comprehensive account of physical vs. metaphorical motion encoding across languages from the same (i.e., inter-typological variation) vs. a different typological group (i.e., intra-typological variation)—thus expanding our understanding of the cross-linguistic factors that underlie the linguistic construal of motion in space.

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Conceptual Processes in the Teaching of Thinking-for-Speaking Patterns and Motion Events

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Keywords: genetic method, motion, conceptual approach

This talk presents Vygotsky (2013)'s (socio)genetic method to be applied in second language (L2) teaching/learning research. The genetic method transcends simple causality and other positivist investigative methods and focuses instead on documenting the development of higher psychological functions through mediation in both experimental and naturalistic settings. Through the method of double stimulation, a methodological turn is proposed in order to understand and document the mediational means of cognitive processes, and the creation of representations as mediational thinking for sociocultural and psychological interaction. To that end, the presentation will illustrate pedagogical interventions among L2-Spanish learners at US universities with a focus on two conceptual categories: (1) motion verb constructions when asking and giving directions, and (2) perspective-taking in deictic verbs of motion. We will observe how both learners and instructors take an active role in the research process. The pedagogical hypothesis in this study is that it is indeed possible to teach concepts in a L2 communicative classroom. We also hypothesize that it is difficult, but also possible to shift L1 thinking-for-speaking (TFS) patterns in a communicative L2 classroom, if students focus on creating, designing, and constructing conceptual categories as tools for orientation. Instructors need: (1) a complete brief conceptual explanation of a minimal unit of instruction, (2) a concise visual representation or materialization of the explanatory concept to be used as a psychological tool and promote sense-making activity in L2 learners, and (3) finally and most importantly, to introduce conceptual reflective tasks that foster mindful conceptual engagement (Aguiló Mora & Negueruela Azarola 2022). Preliminary results based on frequencies of participants' responses show that the documentation of the mediated process by the learners themselves seems to help them construct more meaningful and accurate performances when expressing directionality and deixis. It also fosters on the part of the researcher the focus on the process of transformation and the mediating activity/tool, as a driver of the change and as a potential result of learning itself. In sum, from a conceptual perspective, the point is not only to assess the outcomes, but also to document the creation/manipulation and understanding of conceptual categories as both tools for understanding *and* as the very result of learning. In other words, the point is to evaluate not only the result but the process itself.

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What the interplay between speech and gesture reveals about motion events in European Spanish: cross-modal distribution and semantic congruency

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Keywords: Multimodality, Gesture, Motion, Spanish, Speech-gesture synchronization

Co-speech gestures are pervasive in human interaction: speakers in all cultures unconsciously produce hand movements that co-occur with speech and represent semantic content in an iconic way (Özyürek, 2021). While speech and gesture tend to be semantically co-expressive, the two modalities do not always express identical aspects (McNeill, 1992). Iconic gestures usually add new information, whereas the interaction of speech and gesture generally modulates the idea conveyed in words, by either reinforcing or downplaying it (McNeill, 2000).

In the domain of motion events (Talmy, 1991; Slobin, 1996; i.a.), multimodal analyses have shown that motion event encoding varies inter-typologically in what Path and Manner information is encoded in iconic gestures and in how it is distributed across modalities (McNeill, 2000; Özyürek et al., 2008). Despite the growing theoretical interest in the tight relationship between speech and gesture, research on speech-gesture synchronization is still scarce at a granular level.

The main aim of this talk is to explore the interplay between speech and gesture when speaking about motion in Spanish. More precisely, this study provides a granular description of two specific issues related to Path and Manner encoding that still remain underexplored in the literature: (i) cross-modal distribution of semantic components at the clause-level, (ii) speech-gesture semantic congruency (SGSC) at the verb level.

Data consist of 178 videotaped oral descriptions by 12 native speakers of European Spanish. Following Kita and Özyürek's (2003) procedure, data were elicited using the Tomato Man set of stimuli (Özyürek et al., 2001). Utterances and event-external gestures produced during the first description of the target event were coded using ELAN (Lausberg & Sloetjes, 2009). Narrations of two participants were also coded by a second independent coder to check for inter-rater reliability.

Two were the main research questions in this study. The first question investigated whether the gestural means of encoding Path and Manner depend on the strategy used in speech. Previous research had shown that speakers of verb-framed languages such as Japanese and Turkish tend to use separate gestures for Path and Manner, thus mirroring the typologically-congruent clausal packaging strategy in speech, i.e. separate clauses (Özyürek et al., 2008). However, McNeill (2005) reported a contradictory behaviour in Spanish speakers: they showed a preference for conflated gestures. Results support this finding and suggest that (i) Spanish speakers are likely to combine a Path-only or a Manner-only gesture with a conflated gesture, (ii) packaging strategies in gesture might depend on the ones used in speech.

The second question asked whether and, to what extent, information conveyed in gesture is congruent with that encoded in speech. In satellite-framed languages, Manner verbs might coordinate with either Path or Manner gestures depending on the component foregrounded by the speaker (McNeill, 2000). However, little is known about how Path verbs coordinate with gestures in verb-framed languages (e.g. Spanish). Results revealed that (i) Path and Manner verbs are not strictly semantically-congruent with co-expressive gestures, (ii) SGSC depends on the component conveyed by the verb.

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Is he pushing the cart to the tiger cage or is he going to the tiger cage with the cart?
The multimodal expression of caused motion events in French and Dutch as L1 and L2

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Keywords: caused motion; co-speech gesture; thinking for speaking; multimodality

Space is fundamental to human cognition and is part of our daily life. Although it is supposed to be a universal cognitive domain, crosslinguistic research has shown that there is a lot of diversity in the way it is expressed. Talmy (1985, 2000) distinguished between verb-framed languages (V-languages), i.e., languages in which path is encoded in the verb and manner in a satellite (e.g., Romance languages) and satellite-framed languages (S-languages), i.e., languages in which manner is encoded in the verb and path in a satellite (e.g., Germanic languages). These two types of languages also show similar patterns when it comes to the realization of caused motion events. In V-languages, there are two typical ways to express caused motion events: using a transitive verb as in (1) or a complex causative construction (*faire* 'make' + infinitive) as in (2) (Hendriks, Hickmann & Demagny 2008). In S-languages, the verb expresses cause and/or manner and path is expressed in satellites as in (3).

(1) Il a monté la balle dans sa chambre. [He took the ball up to his room]

(2) Il a fait rouler la balle le long du mur. [He rolled the ball along the wall]

(3) Zij schopte de bal in het doel. [She kicked the ball into the goal]

As we acquire our first language, we learn a specific way of thinking-for-speaking (TFS) (Slobin 1991). Our first language has an influence on how we describe the world both in speech and gesture (i.a., Kita & Özyürek 2003; Stam 2006; McNeill & Duncan 2000; Gullberg 2009; Negueruela et al. 2004; Kellerman & van Hoof 2003). When we learn a second language, we thus need to learn the multimodal TFS-pattern of our target language. The current study aims to (further) describe the multimodal TFS-pattern of French and Dutch by analyzing how they realize caused motion events and see how French-speaking learners of Dutch deal with these differences.

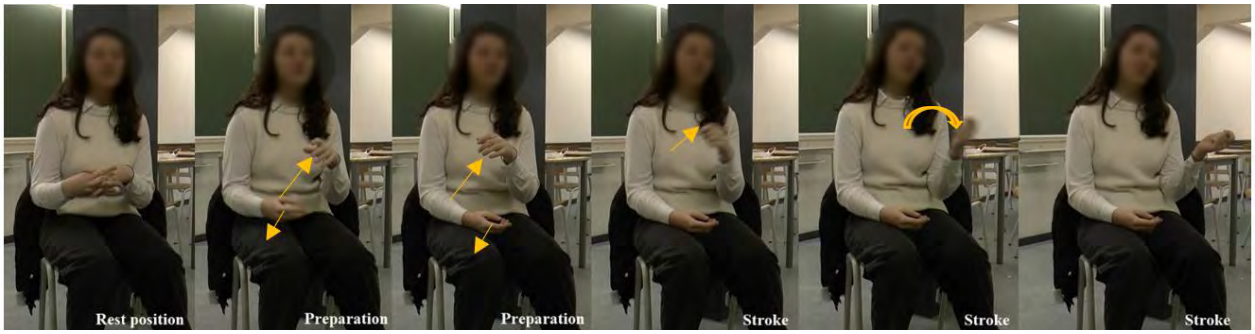
We conducted an elicitation experiment in which participants recounted scenes from a *Tweety and Sylvester* cartoon (1957) which contain 69 caused motion events. Fifteen L1 French speakers, twelve L1 Dutch speakers, and fifteen CLIL[1] French-speaking learners of Dutch with a pre-intermediate level completed the task. The speech analysis consists of looking at which semantic components (manner, path, cause) are encoded in the verb and satellites and how they are combined following Hendriks, Hickmann & Demagny (2008). Gestures are analyzed regarding the semantic components of motion they convey (*path, manner & cause; path & cause; manner & cause; ground*).

The data are currently being analyzed. Preliminary results already show some tendencies. There seems to be more variation in French than in Dutch in terms of speech combinations, which corresponds to Hendriks, Hickmann & Demagny (2008)'s findings on French and English. L1DS tend to conflate manner and cause in the verb and combine it with a path-satellite and a gesture conveying manner, cause, and path as in Figure 1. Surprisingly, L1FS sometimes encode only manner and cause in speech. These utterances are often accompanied by gestures conveying cause, manner, and path. Still, L1DS tend to produce these gestures more often than L1FS. L2 learners also tend to convey these three semantic components in their gestures. Finally, they sometimes use these gestures as compensation gestures: they describe the event as a transfer event in speech and as a caused motion event in gesture as in Figure 2 where the participant used the neutral verb *geven* [give] instead of *gooien* [throw] and show in their gesture that he actually throws Sylvester.

[1] Content and Language Integrated Learning

Figure 1: Gesture co-occurring with “dan zit iemand biefstukken naar de tijgers te gooien” [Then someone is throwing steaks to the tigers] (DU10, ME36)

Figure 2: Gesture co-occurring with “en <> hij geeft ook Grosminet aan de dieren” [and <> he also gives Sylvester to the animals] (CLIL9, ME37)



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Placement and removal events in Modern Uyghur: A typological perspective

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Keywords: placement event, removal event, Uyghur

While motion is a fundamental aspect of human experience, the way it is expressed across languages shows a great deal of variation (e.g., Talmy, 2000), and in this study, I extend this line of inquiry to an underrepresented Turkic language, i.e., Modern Uyghur (henceforth Uyghur). Specifically, I take, as my point of departure, that Uyghur is a typical verb-framed language, as established in previous work in the context of spontaneous (Tusun & Hendriks, 2019) and caused motion (Tusun & Hendriks, 2022), and investigate whether and to what extent the language displays the same typological traits in the domain of placement and removal events. My data consist of twenty-five Uyghur native speakers' verbalisations of the standard elicitation material for placement and removal events developed by previous researchers (e.g., Bowerman, Gullberg, Majid & Narasimhan, 2004). In the light of previous findings on a large number of languages (cf. Kopecka & Narasimhan, 2012), I focus on the following three aspects of the data: 1) how different semantic components of the events (e.g., path, cause, goal of motion, source of motion) are lexicalised and packaged within motion constructions, 2) semantic specificity of motion verbs, and 3) the (a)symmetries in lexical resources and the encoding of ground information in placement versus removal events. The results show, first of all, that in encoding placement and removal events, Uyghur speakers typically conflate cause and motion in the main verb and express path via satellite devices (i.e., case marking) in a single clause. The exception to this is when they describe events involving boundary crossing (e.g., 'put into', 'take out of'): they express path and cause (via causative suffixes) in the verb alongside additional path information (e.g., source/goal of motion). Uyghur speakers also tend to use semantically general verbs, although this tendency is more pronounced with removal events than with placement events. Finally, speakers tend to include more ground information with placement events than with removal events. In this presentation, I aim to shed light on issues including intra-language, intra-typological and inter-typological variations in encoding motion events. In terms of intra-language variation, I will discuss my findings in relation to those from previous studies on motion expression in Uyghur to determine whether the language shows a consistent typological profile, or whether it exhibits variation as a function of event type (voluntary motion vs. caused motion vs. placement/removal events). In relation to intra-typological and inter-typological variation, I will discuss the findings in the context of relevant studies on verb-framed languages (e.g., Spanish, Hindi) and satellite-framed languages (e.g., Swedish). I will conclude by reflecting on the status of Uyghur in motion event typology and on the nature of the typology more generally.

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When gestures do or do not follow language-specific patterns of motion expression in speech: Evidence from Chinese, English, and Turkish

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Keywords: Motion event, Co-speech gesture, Silent Gesture, Cross-linguistic differences, Chinese

Adults show systematic cross-linguistic differences in how they package and order components of a motion event in speech (Talmy, 2000). These differences influence the organization of semantic elements in gesture, but only when gestures are produced with speech (co-speech gesture), not without speech (silent gesture). For example, adult speakers of different languages show a binary split in packaging and ordering semantic components of events when describing them in speech with co-speech gesture. English speakers typically use conflated gestures, synthesizing manner and path into a single gesture (e.g., wiggle fingers forward to convey running forward); Turkish speakers use separated gestures, producing one gesture for manner (e.g., wiggle finger in the same location to convey running) and another for path (move finger forward to convey forward movement). The two languages also differ in the ordering of semantic components in speech, with motion situated either at the end (Figure-Ground-MOTION, Turkish) or in the middle (Figure-MOTION-Ground, English) of an event description. These differences dissipate, however, when speakers describe motion scenes exclusively in gesture without speaking (i.e., silent gesture)—with speakers of both languages using the conflated strategy and Figure-Ground-MOTION ordering in silent gesture (Özçalışkan et al., 2016) In this study, we focused on Mandarin Chinese, a language that does not follow the binary split in its expression of motion in speech (Paul et al., 2022), and asked whether adult Chinese speakers would follow the language-specific patterns in co-speech but not silent gesture, thus showing a pattern akin to Turkish and English adult speakers in describing motion. If observed, this finding will provide further support for 'thinking for speaking' account (Slobin, 1996), which states that language influences thought, but only during online speech production.

We examined this question by studying speech, co-speech, and silent gestures produced 20 adult native Chinese speakers (M_{age} = 19.55 [SD = 1.36]), in comparison to 20 adult English (M_{age} = 18.95 [SD = 1.10]) and 20 adult Turkish (M_{age} = 20.8 [SD = 1.76) native speakers. Each participant was interviewed individually by a native speaker of their language; they first watched and then described 16 animated motion events with salient manner and path components (e.g., crawl across carpet, run into house)—one at a time—in a structured interview format in two different ways: once with speech while also using their hands (i.e., co-speech gesture condition), and once without speech using only their hands (i.e., silent gesture condition). All responses were transcribed and coded by native speakers and analyzed with two-way mixed ANOVAS.

Our results showed an effect of language on gesture when it was produced with speech—speech and co-speech gestures produced by Chinese speakers differed from speech and co-speech gestures produced by Turkish and English speakers. However, we found no effect of language on gesture when it was produced without speech: silent gestures produced by Chinese speakers were identical in how motion elements were packaged and ordered to silent gestures produced by English or Turkish speakers. Our results provide support for the "thinking-for-speaking" account, namely that language influences thought only during online, but not offline, production of speech.

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Cross-linguistic colexifications across research fields

Convenors:

Anna Tjuka and Johann-Mattis List

Colexification patterns in the lexicon of physical actions: Synchrony and diachrony

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Keywords: diachronic colexifications, meaning change, polysemy, cognitive mechanisms

This study aims to add to the body of knowledge pertaining to the evolution of word meaning by examining synchronic crosslinguistic data in parallel with diachronic data from Ancient Greek. Specifically, we construct a synchronic colexification network of concepts from the physical actions domain with a twofold goal: (1) to identify diachronic pathways in the Ancient Greek lexicon that will enrich the synchronic network; and (2) to examine the degree to which cross-linguistic colexification networks and within-language polysemy patterns are interrelated. The specific hypothesis we test is that high network degree for a concept in a colexification network translates into high frequency of the lexemes expressing this concept in a language. In line with relevant research (e.g., Youn et al., 2016; Jackson, 2019), we utilize quantitative computational means to gather and analyze data from two types of resources: (a) dictionaries and (b) the CLICS[3] (Rzymski et al., 2019) database containing meaning associations in 3156 language varieties. We start with four Swadesh concepts (Swadesh, 1952) from the physical actions domain, i.e., SPLIT, SCRATCH, RUB, and WIPE, and employ the protocol developed by Georgakopoulos & Polis (2021) to create binary matrices that include all those concepts that colexify with the four initial concepts. We have compiled two such matrices which are the basis for the synchronic network: a CLICS[3] dataset and a 22-language dictionary-based dataset. Each of those is run through a Python script whose result is imported into Gephi (https://gephi.org/) where we carry out visualizations and draw network metrics. In a final step, we integrate the diachronic dimension into this synchronic network by investigating meaning extensions in the Ancient Greek lexicon from three periods, i.e., Homeric (8th c. BCE), Classical (6th-4th c. BCE), and Post-Classical (3rd c. BCE-3rd c. CE). This investigation is coupled with the identification of the cognitive motivations behind these extensions. Regarding our first research question, we can identify certain semantic changes in the domain in question. For instance, we find that in Homeric Greek the verb *smḗkhō* expresses the meaning WIPE (see [1]), but it only extends to the meaning WASH after Homer (see [2]). WASH is derived from WIPE meaning through metonymy, as washing generally involves the removal of dirt and grime from an object or surface using water.

1.	*ek*	*kefalês*	*d'*	***ésmēkhen***	*halòs*
	ELAT	head(F):GEN.SG	PTCL	**wipe:PST.3SG**	sea(F):GEN.SG
khnóon		*atrugétoio*			
flake(M):ACC.SG		unharvested:GEN.SG.F			

'He **wiped** the unharvested sea's [salt] flakes off his head' (Homer, *Odyssey* 6.226; 8th c. BCE)

2.	*kaì*	*mēdèn*	*autòn*	*proseksergázesthai*	*all'*
	CONJ	INDEF	DEM.ACC.SG.M	do:INF.PASS	CONJ

állous	*kaì*	*katakhéein*	*kaì*	***smḗkhein***
DEM.ACC.PL.M	CONJ	pour:INF	CONJ	**wash:INF**

'[The person taking the bath] should do nothing but others [must] pour water and **wash** him' (Hippocrates, *De diaeta in morbis acutis* 18; 5th-4th c. BCE)

Regarding the second question, we rely on *degree centrality*, a network metric which is considered a strong indicator of node importance in a graph (Newman, 2010). Given that polysemy and frequency have been found to be correlated, with more frequent words having more meanings (e.g., Bond *et al.*, 2019), we expect that high network degree for a concept in a colexification network will translate into high frequency of the lexemes expressing this concept in a language. To sum up, we aim to demonstrate that colexification networks can serve as a starting point for uncovering pathways of meaning evolution and can also be used to test certain hypotheses within languages. This parallel investigation promises to shed additional light on how polysemy patterns evolve over time and on the way a semantic field is structured.

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Discursive variation explains colexification: A lexicon-wide case study on the DoReCo corpus

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Keywords: lexical semantic typology; colexification; computational methodologies; discursive motivation; corpus-based studies

Crosslinguistic variation in patterns of how words group together (or: colexify, cf. François 2008) meanings that are expressed with distinct words in other languages provides us with insight in the functional pressures that shape the structure of the lexicon. One factor that has been explore is the so-called need probability of a concept, or the likelihood that a speaker of a specific language expresses a concept in language use. Kemp et al. (2018) report that a greater need probability in a language goes hand in hand with a lower rate of colexification, the motivation being that having a greater use for a concept warrants that concept having its own label. In this talk, we build on these inquiries into the discursive motivation of colexification, innovating in three substantial ways. First, while previous work considers individual case studies, we present a lexicon-wide study. Second, our study is corpus based, rather than based on secondary, non-discursive data (such as dictionaries and word list). Finally, we consider aspects of discursive organization beyond usage probability.

In particular, we look at contextual diversity, predicting that the more diverse the corpus contexts are in which a pair of concepts occurs, the less likely that pair is colexified: the lexical item would be 'spread too thin' across the contexts of use of the two concepts. This factor is motivated by the observation that knowing a concept does not entail knowing how to apply it in language use, and as such, crosslinguistic variation in the rules of application are expected (Goodwin 1994, Enfield 2014). We furthermore consider, per doculect, how distinct the linguistic contexts of pairs of concepts are from each other. This informs us, similarly, about the need to keep the concepts apart: the more similar the usage contexts of two concepts are to each other, the more likely it is that the term expressing one concept can express the other without much confusion. We predict that greater separability of the contexts coincides with lower rates of colexification.

We use the DoReCo corpus (Seifart et al. 2022), a typologically diverse sample of spoken language from 51 doculects. We operationalize 'concepts' as English lemmas in the free translation (acknowledging the problems with this approach). For every sufficiently frequent concept, we retrieve likely translation-equivalent tokens using Wälchli's (2014) L-Algorithm. Next, we determine whether a doculect colexifies pairs of concepts, by measuring the similarity of the translation-equivalent word tokens of the concepts. This yields 79 concept pairs that are colexified in at least one doculect. See (1) for examples (with proportions of languages colexifying them):

(1) *wife-woman* (.23)
speak-talk (.21)
hear-listen (.14)
river-water (.13)
stick-tree (.10)
bring-carry (.05)

Next, we inquire if our discursive factors (need probability, contextual diversity, separability) allow us to predict whether a doculect colexifies a particular pair of concepts. By themselves, all factors are found to be predictive. In a multiple logistic regression, however, the effect of need probability is mostly obscured by the other two contextual factors, showing that rather than the mere discursive frequency of a concept, it is the ways in which concepts are deployed in discourse that predicts whether a language colexifies them.

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When do languages use the same word for different meanings? The Goldilocks principle in colexification

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Keywords: language universals, colexification, cognitive effort, ambiguity, efficient communication

Colexifications are pervasive in language, and often systematic (François, 2008; Jackson et al., 2019; Xu et al., 2020). For instance, the colexification of toe and finger is found in at least 135 languages (Rzymski et al., 2020). We examine the interplay between two competing pressures that affect how languages are shaped, and that may partially explain cross- linguistic patterns in colexification: the cognitive pressure for simplicity, and the communicative pressure for complexity.[1] Indeed, a growing body of research supports the idea that languages are efficient in the sense that they strike a good balance between informativeness and simplicity (e.g., Christiansen & Chater, 2008; Regier et al., 2015); we provide evidence for such a balance in cross-linguistic colexification patterns. In particular, we propose a Goldilocks principle according to which meanings colexify when they are related enough to foster cognitive economy, and at the same time not too confusable in actual language use. We provide support for this principle using data about over 2200 languages and 1400 meanings harvested from CLICS^3 (Rzymski et al., 2020), the largest cross-linguistic database of colexifications available to date.

We first fit a generalized additive logistic model to the colexification data. The model characterizes how likely a pair of meanings is to colexify in a given language as a function of a data-induced estimate of relatedness: the first principal component (PC1) of two semantic relatedness measures –distributional similarity, using pre-trained embeddings (Grave et al., 2018), and associativity, using association norms (De Deyne et al., 2018). The models are also passed information about how often a pair of meanings colexifies in other languages, to control for the effect of language contact and common linguistic ancestry (Jackson et al., 2019; Xu et al., 2020). Figure 1A shows the marginal effect of semantic relatedness in the model, and Figure 1B provides illustrative sample predictions. As predicted under the Goldilocks principle, the induced pattern is linear at first and changes for high relatedness values; however, the effect may less strong than we anticipated (see shaded area for the credible interval).

We do a second analysis, not reported in full for space reasons, that specifically targets confusability, since our hypothesis is that the observed decrease in colexification likelihood for highly related meanings is due to their confusability. We find that indeed, among related meanings, more confusable meaning pairs like left-right colexify less across languages than other meaning pairs that we argue are not as confusable in actual language use (e.g. toe-foot).

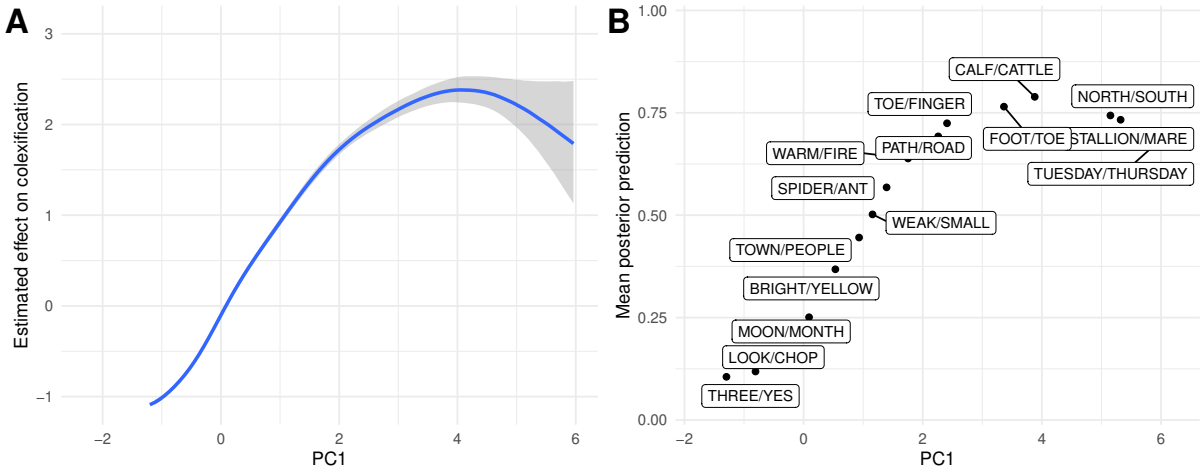

Fig. 1: A: Marginal effect semantic relatedness (PC1, in standardized units). Shading shows 95% credible intervals. A smooth function is inferred from the data and characterizes how the contribution of PC1 to colexification likelihood changes across its values (on the logit scale). B: Example of mean posterior predictions for meaning pairs.

[1] This abstract summarizes the work published in Brochhagen & Boleda (2022).

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Dialexification: A tool for studying cross-linguistic patterns of semantic change

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Keywords: lexicon, etymology, semantic change, historical linguistics, lexical typology

In order to decide whether two words with different meanings are cognate, historical linguists must be able to assess the likelihood of the semantic changes that might link the two meanings historically. While the general cognitive mechanisms behind semantic change are well-understood (e.g. Sweetser 1990, Traugott & Dasher 2002), we still lack an empirical catalogue of attested semantic changes across the world's languages, which linguists could turn to for guidance when judging the cognacy of words.

One could propose to use synchronic COLEXIFICATION (François 2008, 2022) as a proxy for likelihood of semantic change. That is, if two senses A and B are close enough to be frequently "colexified" (expressed by a single polysemous word), we may expect that over time, a word with sense A is likely to acquire sense B, or vice versa. If so, a weighted colexification network of the sort provided by CLiCS (Rzymski et al. 2020) could serve as a preliminary catalogue of likely semantic changes. However, in practice, meanings that are related historically are not always attested as colexified pairs: e.g. the cognate pair {Latin *hortus* 'garden' – Greek χόρτος *khórtos* 'food'} points to a semantic link <garden>–<food> that is not attested, to our knowledge, as a synchronic colexification.

We address this issue by introducing the novel concept of "DIALEXIFICATION" (short for "diachronic colexification"). Two meanings are "dialexified" if they are attached to words from the same *cognate set* – that is, to descendants of the same etymon. For example, descendants of the PIE root *gʰerdʰ- 'enclose' include such meanings as 'belt' (Old Norse *gjǫrð*), 'fence' (Albanian *gardh*), 'yard' (Old Norse *garðr*), 'garden' (German *Garten*), 'earth' (Scots *yird*), 'region' (Old English *ġeard*), 'estate' (Danish *gård*), 'castle' (Czech *hrad*), 'city' (Russian город *gorod*), 'house' (Romani *kher*), 'family' (Bengali ঘর *ghor*), and 'wife' (Sanskrit गृह *gṛhá*). By targeting cognate sets rather than lexemes, dialexification can capture a broader range of semantic connections than synchronic colexification alone.

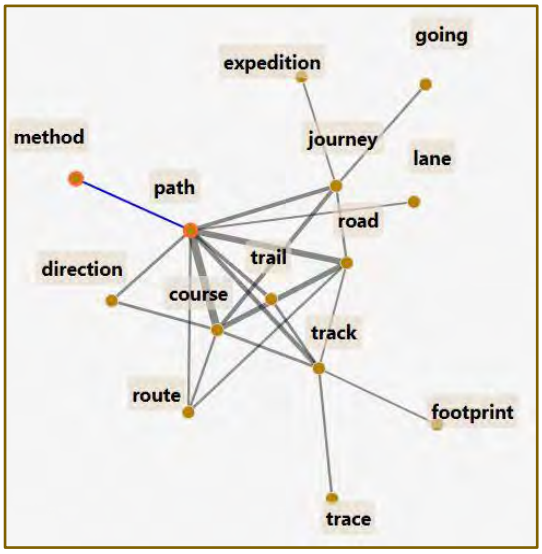
Crucially, certain dialexifications are attested repeatedly across the world's languages. For each pair of senses, the number of different etymons that dialexify them can be taken as a reliable indicator of their semantic proximity, and thus, of the likelihood that a word expressing one sense can eventually express the other. We report here on our efforts to build *EvoSem*, a cross-linguistic database of dialexifications, assembled from open-access online etymological resources. We have begun with the collaborative online dictionary Wiktionary (English version: https://en.wiktionary.org/), for three major language families; Fig. 1 shows the current state of our database. We also plan to include data from Austronesian, based on the *Austronesian Comparative Dictionary* (Blust & Trussel 2013) – as well as other language families for which online comparative dictionaries are available.

Based on this database, our interface (not yet public) can produce weighted dialexification graphs (Fig. 2a), where links are drawn between the most frequently dialexified pairs of meanings. The thickness of lines is proportional to how frequently each connection is attested (by different cognate sets), and thus how likely it is to constitute a pathway of semantic change. A table is produced dynamically to illustrate each case of dialexification, showing cognate forms and their shared etymon (Fig. 2b).

In sum, we hope to provide both a new conceptual tool (*dialexification*) and a growing database (*EvoSem*) to support empirically-grounded work in comparative linguistics.

	Indo-European	Semitic	Uralic
# source lemmas and roots in the highest proto-language	1,304	196	292
# reflexes in descendant languages	62,930	1,855	2,854
# languages covered, including intermediate proto-languages	650	139	122
# languages covered, excluding proto-languages	620	138	111
# distinct meanings covered	21,736	2,714	1,749

Fig. 1: Statistics of the EvoSem database (under construction) as of March 2023. Etymological data extracted from the Wiktionary collaborative lexical database.



Etymon	Meaning	Form	Language
*h₃riH-nó-s	path	rían	Old Irish
*h₃riH-nó-s	method	rian	Scottish Gaelic
*sod-ó-	path	ход - xod	Russian
*sod-ó-	method	ὁδός - hodós	Ancient Greek
*weǵʰ-o-s	path	väg	Swedish
*weǵʰ-o-s	method	Weg	German
*wért-mn̥	path	વાટ - vāṭ	Gujarati
*wért-mn̥	method	বাট - bat	Assamese
*wih₁-eh₂	path	via	Latin
*wih₁-eh₂	method	via	Latin
*yéwg-o-s	path	योग - yog	Hindi
*yéwg-o-s	method	योग - yóga	Sanskrit

Fig. 2: A weighted dialexification graph built around the notion PATH*, showing the number of cognate sets supporting various semantic links. In the current database, the dialexification* ‹PATH – METHOD› *is attested under six etymons – as displayed in the table (right).*

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Partial and full colexification in the perception domain

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Keywords: Perception verbs, Colexification, Lexical typology, Sensory language

Research on colexification suggests various factors influence the mapping between words and meanings across languages (e.g., Xu et al. 2020, Brochhagen & Boleda 2022). Focusing on the semantic domain of perception, we report new work that extends the empirical focus to partial colexification, in which two senses are associated via partial identity of forms (e.g., compounding or derivation). Our departure point is Viberg (1984), who proposed semantic extensions of perception verbs are universally constrained by a biologically motivated sense modality hierarchy, with vision at the top, followed by hearing, and then touch, taste, and smell. Viberg found that while perception verbs extended their meanings via partial colexification to denote sense modalities beneath them on the hierarchy (e.g., HEAR + ODOUR → SMELL), the reverse direction of extension was unattested. While this unidirectional claim has been described as a universal of semantic change (e.g., Evans & Wilkins 2000, Riemer 2010), it has yet to be tested quantitatively.

Drawing on a balanced sample of perception verb lexicons in 100 languages, we examined whether there are cross-linguistic regularities in the partial colexification of sensory meanings. First, addressing the unidirectionality claim, we confirm a robust typological tendency for sensory meanings higher on the proposed hierarchy to extend to those beneath them. Rather than ascribe this to a biologically grounded sense modality hierarchy however, we suggest it is better understood in terms of frequency asymmetries and the general cross-linguistic tendency for sources of semantic extensions to be more frequent than their targets (Harmon & Kapatsinski 2017, Haspelmath 2006, Winter & Srinivasan 2022).

We then turn to the cross-modal semantic associations represented in the set of partial colexifications and ask whether these pattern similarly to those arising from full colexification. Strikingly, while HEAR-FEEL is the cross-modal pair most frequently colexified across languages and geographical areas, we find these meanings are almost never linked via partial colexification. This suggests that, for this domain, partial and full colexification are motivated by different underlying factors. While full colexification can be understood to be driven by conceptual resemblance between meanings (Xu et al. 2020), we suggest partial colexification is the grammaticalized outcome of the communicative need to distinguish between interpretations of polysemous perception verbs. In the case of polysemies involving SMELL or TASTE, compounded sensory nouns are typically recruited for this; for polysemous HEAR-FEEL verbs, languages tend to rely on clausal strategies to differentiate between sensory interpretations. This observation lends cross-linguistic support to the idea that sense modality information tends to be encoded differentially across lexical categories (Strik Lievers & Winter 2018). More generally, our study highlights the need to consider both conceptual and communicative factors in the mapping between words and meanings.

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The body as a source for object names: A study of partial colexifications across languages

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Keywords: Lexical Typology, Body Parts, Colexifications

Expressions in which a body part term refers to an object occur in most languages. Although English does not systematically use body part terms for objects (Lakoff & Johnson, 1980), numerous examples exist: *foot of the mountain*, *clock face*, etc. In addition, some languages use body part terms consistently for object descriptions (Levinson, 1994). A cross-linguistic approach that considers diverse languages is essential to identify constraints on linguistic variation (Croft, 2016). Thus, the study of cross-linguistic *colexifications* (François, 2008) offers important insights into cognitive principles that facilitate the use of body part terms for objects. As of yet, large-scale studies across many languages (e.g., Jackson et al., 2019; Xu et al., 2020; Brochhagen & Boleda, 2022) have focused on full colexifications in which the same lexical item is used for two different meanings, for example, Czech *ruka* 'hand, arm'. Partial colexifications such as *river mouth* where one part of the word, i.e., *mouth*, is colexified, are examined primarily in studies focusing on a smaller number of languages (e.g., Schapper, 2022; Urban, 2022). In this talk, we present a new methodology that allows us to infer full and partial colexifications between body and object concepts automatically (cf. List, 2023).

The material for our study is based on a large lexical data collection, Lexibank (List et al., 2022). We selected concepts representing human body parts and everyday objects from the Concepticon reference catalog that consists of cross-linguistically comparable concepts (List et al., 2016; Tjuka et al., 2022). The 45 body concepts included, for example, HEAD, NOSE, ARM, and BONE. The 65 object concepts were from the semantic field of artifacts, landscapes, plants, food, and household items. The concepts are linked to word lists such as the Intercontinental Dictionary Series (Key & Comrie, 2021) which are curated in Lexibank (List et al., 2022). By employing the methods described in Rzymski et al. (2020), we automatically generated a colexification network of the data. However, this preliminary network only provided full colexifications, i.e., two different concepts are linked to identical lexical items. Thus, we established a new method that detects common substrings across lexical items to extend the analysis to partial colexifications (List, 2023). This method recognizes whether a concept is expressed, for example, by a compound as in *river mouth*, where only one part colexifies with a body concept.

We analyzed 93 colexifications between a body and object concept across 997 languages from 87 language families. The results indicate that only a few body-object colexifications are frequent across several languages, but many distinct body-object colexifications exist in diverse languages. For example, the colexification between SKIN and BARK is one of the most widespread and occurs in 128 languages. There are also languages like Maori or Abui that use the partial colexification 'tree skin' for the concept BARK. The body-object colexifications arise from similarities based on visual and functional perception between body parts and objects. For example, shape leads to the colexification between NOSE and CAPE and spatial alignment is the basis for HEAD and MOUNTAIN SUMMIT. The study also supports previous findings that languages have preferences for certain similarities (Tilbe, 2017).

The implications of the findings are far-reaching in that they offer new insights into meaning extensions of body part terms from a cognitive perspective. In addition, the new methodological approach allows for a study of different morphological structures in the formation of cross-linguistic colexifications and can be extended to other semantic domains.

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Diachronic perspectives on form-meaning mapping: Testing the macro-event hypothesis

Convenor: Fuyin (Thomas) Li

Attraction or Differentiation: Diachronic Changes in the Causative Alternation of Chinese Change of State Verbs

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Keywords: attraction, differentiation, causative alternation, Chinese change of state verbs

Attraction and differentiation are two recently proposed processes of constructional change. Attraction is a process of two constructions becoming more alike while differentiation is a process of two constructions becoming less similar. De Smet et al. (2018) regard attraction as a fundamental process but consider differentiation as epiphenomenal and accidental. In contrast, Traugott (2020) proves attraction and differentiation are intertwined because differentiation inevitably arises from attraction. This paper, situated in a usage-based framework, supports that attraction and differentiation are complexly intertwined. Our evidence comes from the causative-inchoative alternations of Chinese Change of State Verbs (COS verbs). COS verbs are verbs that refer to the change of an entity with respect to its property (Levin 1993; Talmy 2000: 237). They have undergone significant diachronic changes in Chinese, especially in their causative-inchoative alternations. In ancient Chinese, they are monosyllabic, and can alternate between causative and inchoative constructions. As demonstrated in examples (1a-b), the COS verb po (break, hurt) allows both the causative form *po-tou* and the inchoative structure *tou-po*. In modern Chinese, COS verbs, though licit in inchoative forms, have to collocate with action verbs to constitute the causative pattern. As exemplified in (2a-b), monosyllabic po only occurs in the inchoative form. It has to collocate with manner verbs like da to form the causative form.

(1) a. tuī yī dà shí xià, pò qí tóu.
push one big stone down, hurt his head
'Push one big stone down and hurt his head.'

b. yǐ lí dǎ wǒ, tóu pò nǎi ěr !
with pear hit me, head hurt as such
'Struck me with a pear and hurt my head as such.'

(2) a. tā dǎ-pò le bēi-zi.
He break LE cup
'He broke the cup.'

b. bēi-zi pò le.
cup break LE
'The cup is broken.'

This paper intends to explore: (1) what causative-inchoative alternations are displayed in the argument structure constructions of Chinese COS verbs? (2) how do attraction and differentiation drive the alternation between the causative and the inchoative pattern? To answer these two research questions, we adopt a corpus-based methodology. Our dataset is established by extracting the usages of *po* and *kai* (open) from CCL corpus. Two case studies are successively conducted to explore the causative-inchoative alternations of COS verbs. The first study captured the four causative-inchoative alternation pairs of COS verbs, including the alternation between S+COS+O and O+COS, the alternation between S+V+COS+O and O+COS, the alternation between S+COS+V+O and O+COS+V, as well as the alternation between S+V+COS and O+V+COS. The second study found attraction and differentiation operate both at global and local levels. At the global level, the emergence of the third and fourth alternations results from both the differentiation from the second alternation and the attraction to the first alternation. At the local level, the second alternation demonstrates a differentiation between the causative and inchoative form while the other three alternations show an attraction between the two alternatives. Overall, our study confirmed the proposal that attraction and differentiation are two sides of the same coin (Traugott 2020). Moreover, in consideration of the grammar network of constructions, we further differentiated global attraction and differentiation from local attraction and differentiation.

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Causative Alternation in Mandarin Resultatives: A Macro-event Perspective

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Keywords: causative alternation macro-event, Mandarin resultatives, construal

The study aims at analyzing semantic characteristics of the causative alternation and exploring the underpinning motivation and cognitive mechanisms from a perspective of Macro-event. We tentatively construct a causative alternation macro-event model in which the causative alternation in Mandarin resultatives is regarded as an alternative construal of the same situation representing macro-event. 3770 “V pò” in People’s Daily in BCC (BLCU Corpus Center) are selected for the analysis. The results indicate that (1) the overall constructional distribution of the causative alternation is uneven with different specific predicate verbs in “V pò” resultatives and the constructional preference has some impact on the causative alternation strength but can only partly predict the causative alternation. (2) The semantic characteristics of the causative alternation in “V pò” resultatives are exhibited in the semantic properties pertaining to force dynamic patterns, conceptual integration degree, semantic orientation, and the semantic properties of event participants. “V pò” resultatives show causative and anticausative force dynamic patterns involving the external and reflexive force. The causers of “V pò” resultatives cover concrete forces referring to agent, instrument and natural force and abstract forces including event and metaphorical force. The more various the causers are, the stronger the causative alternation strengths are; however, it is a matter of degree. (3) Both internal and external motivations are found to contribute to the causative alternation. The joint conceptual semantics of the resultatives can be construed as undergoing the cognitive process of sequential scanning or summary scanning in windowing of attention and a shift of profile in information focus on representing causative or anticausative variants.
Theoretically, the present study has built a causative alternation macro-event model for the causative alternation in Mandarin Chinese resultatives, focusing on the role of constructional preference, event participants, and the exploration of the motivation and cognitive mechanisms. The present study posits that causative alternation is motivated, which extends and enriches the scope of macro-event. The corpus-based investigation has proved the critical role of event participants and that causative alternation is a matter of degree. Moreover, the study demonstrates the possibility and applicability of the corpus-based study on the causative alternation in Mandarin resultatives, which might shed new light on the methodology of the studies on causative alternation.

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The Symmetry and Asymmetry of the Complements guòlái/come over and guòqù/ go over from the perspective of Macro-event

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Keywords: complement, macro-event, collostructional analysis

As a distinctive type of closed-class forms, verb complements have received extensive attention in linguistic research. Previous research has made thorough qualitative induction and analysis of the meaning of each single verb complements. Yet, little attention has been paid to the comparison in terms of their usages. In fact, when comparing complements *guòlái* and *guòqù*, both symmetrical and asymmetrical usage patterns can be found. The term 'symmetry' is used here to refer to usage patterns found to be the same for both constructions, as *pǎo/run* can collocate either with *guòlái* or *guòqù*. Under the theoretical framework of macro-events proposed by Talmy (2000), both *guòlái* and *guòqù* are semantic components categorized as "satellites". Even though satellites are supplementary for verbs, they form core schema of motion events. By analogy to motions events, another four types of macro-events are proposed, viz. temporal-contouring events, action correlating events, realization events and state change events. But most of the research conducted on the theoretical basis of event typology tends to focus on motion events only, dissevering the intrinsic connections between different types of events.

In view of these research gaps, the present study focuses on *V guòlái* and *V guòqù* in Chinese, aiming to address the following three research questions: 1) What verbs are selected into constructions *V guòlái* and *V guòqù*? What kind of semantic preference can be found? 2) Do they express different types of events and if so, what are the interconnections between these events? 3) What gives rise to the symmetry and asymmetry in terms of complements *guòlái* and *guòqù*?

To answer these research questions, all concordances containing compound directional complements "guòlái" and "guòqù" in Chinese National Corpus are exhaustively retrieved. Methodologically, this study conducts a simple collexeme analysis (Stefanowitsch & Gries 2003) of *V guòlái* and *V guòqù*. It is found that: 1) There exists an overlap between verbs selected into both constructions, with all verbs that fit into both constructions being verbs of motion (Levin 1993), but the majority of verbs are different. 2) Both constructions can express motion events, state-of-change events as well as realization events. The latter two types of events are metaphorically conceptualized on the basis of motion event. 3) The reason why there exist symmetrical patterns in the usages of "guòlái" and "guòqù" lies in the undefined directionality of subject referent, while the different inferential meanings of "lái" and "qù" account for the asymmetry.

Based on the different types of macro-events expressed by the constructions *V guòlái* / *V guòqù*, this paper analyzes the symmetry and asymmetry of the complements "guòlái" and "guòqù". This study offers a new macro-event perspective to the study of compound complements.

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Diachronic Evolution Continuum of Macro-event Reflected by Resultative Verb Complement in Chinese

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Keywords: Macro-event hypothesis, Diachronic evolution continuum, Resultative verb complement

In modern Chinese, the verb-complement structure is mainly divided into two basic constructions: the verb-directional construction and the verb-resultative construction (Shen 2003)(see 1a-1b).

(1) a. The verb-directional construction: 瓶子 漂出 岩洞。
The bottle floated out the cave.
b. The verb-resultative construction: 你 捡 不捡？ 不捡 我 就 打死 你！
You pick not pick? Not pick I will beat die you!

Both the verb-directional construction and the verb-resultative construction are often used to express macro-event. Macro-event can be regarded as a basic and recurring semantic category of complex events, which can be conceptualized as two relatively simple events and the relations between them. The two relatively simple events tend to fuse into a unitary event at the conceptual level and be expressed by a single clause at the formal level (Talmy 1985, 2000: 216; Li 2018). During this process, humans either analytically cognize macro-event as two discrete and relatively simple events and the relations between them, or comprehensively conceptualize macro-event as a single and integrated complex event (Li 2020).

Specifically, the verb-directional construction can be described as “verb + directional verb(motion verb)” and the verb-resultative construction can be described as “verb + resultative verb/adjective”.

After decades of research, studies on the verb-directional construction have been quite sufficient (Tatsuo 1957/1987; Liu 1992; Liu 1996; Wu 1996, 2010; Jiang, Wu 1997; Liu 1998; Liang 2007; Li 2018, 2019). For the verb-resultative construction, the resultative adjective complement has already been explored by some scholars (Zhu 1982/2000: 126; Du, Li 2021).

However, few studies focus on the resultative verb complement. Based on the macro-event theory and the macro-event hypothesis, this paper is determined to conduct an empirical study to fill the research gap of macro-event’s diachronic evolution continuum reflected by the resultative verb complement.

The verb-resultative construction is a distinctive syntactic construction in Chinese, which is used to express the semantic relation between action and result (Hu 2005). Nevertheless, not until the Early Middle Chinese did the verb-resultative construction first appear (Shimura 1984; Mei 1991; Jiang 1999; Wu 1999; Zhao 2000). Before the Early Middle Chinese, people used causative usage and double clauses to express the semantic relation between action and result. How did the causative usage and double clauses evolve into the verb-resultative construction? What kind of diachronic patterns can be concluded from evolution?

This paper is intended to propose two diachronic evolution continua of macro-event: the syntactic form continuum and the semantic event integration continuum.

The syntactic form continuum:

causative usage → double clauses → coordination → serial verb construction → verb-resultative construction

The semantic event integration continuum:

single caused event(cause or manner implied)→two discrete events→two coordinate events→primary and secondary events→macro-event

Selecting 5 most representative works representing 5 periods in the history of Chinese evolution (see Table 1), this paper builds a corpus to support research, whose total characters are 1,181,180. With the help of corpus research tools, this paper selects “死/sǐ/die, 中/zhòng/hit, 成/chéng/achieve, 透/tòu/penetrate” 4 representative resultative verb complements (see Table 2) from the 5 most representative works to explore the two diachronic evolution continua of macro-event.

Table 1. Five different Chinese historical periods and their representative works

Stage	Period	Time span	Selected work	Authors	Tokens
I	Archaic Chinese	BC 1600-24	Zuo Zhuan (Zuo's Commentary on Spring and Autumn Annals)	Zuo (2016)	276,709
II	Early Middle Chinese	25-618	Shi Shuo Xin Yu (A New Account of Tales of the World)	Liu (2011)	79,093
III	Late Middle Chinese	619-1279	The Annotation of Dunhuang Literature	Huang and Zhang (1997)	319,276
IV	Early Modern Chinese	1280-1911	Yu Shi Ming Yan (Old and New Stories)	Feng (2014)	355,901
V	Modern Chinese	1912-present	I'm Your Father	Wang (2004)	150,201

Table 2. Four representative resultative verb complements and their occurrences in the five representative works

	Archaic Chinese	Early Middle Chinese	Late Middle Chinese	Early Modern Chinese	Modern Chinese	Total
死/sǐ/die	452	39	344	175	44	1054
中/zhòng/hit	28	3	6	20	9	66
成/chéng/achieve	491	69	389	356	250	1555
透/tòu/penetrate	0	0	16	20	29	65

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The Macro-event Hypothesis: Evidence from Resultative Constructions in Mandarin

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Keywords: macro-event hypothesis, resultative, Mandarin, event integration, complement

The resultative constructions used in contemporary Mandarin have evolved from the combination of two separate clauses in Ancient Chinese. For example, the single-clause representation of the resultative construction “dǎ pò huā píng /hit-break vase” has arisen from two separate clauses containing the verbs “dǎ /hit” and “pò/break”, which become the main verb and resultative respectively. There is a huge amount of literature on resultatives, mainly from traditional perspectives such as those of syntax, semantics, or time of historical appearance. But a recent trend has been to study these constructions from the macro-event perspective in cognitive semantics (Talmy 2000a, 2000b). Li argues that a macro-event results from the integration of two simpler events through grammaticalization in Mandarin (Li 2018), thus linking the study of grammaticalization with the formation of macro-events. He further proposes the macro-event hypothesis as follows: Language can often represent two simpler interconnected events more synthetically as a single integrated complex event, a “macro-event”, and represent them in a single clause. On this basis, languages can be divided into two major types: macro-event languages and non-macro-event languages. This dichotomy might alternatively be viewed as a continuum. With corresponding semantic gradations, there might exist syntactic gradations from a double- to a single-clause representation and, within the single clause, from less to more grammaticalization of certain constituents. A language might then progressively change from having solely a highly analytic representation of a privileged relation to also having a highly synthetic one (Li 2020, 2023). Few studies have tested the hypothesis, especially from an empirical perspective. The present paper intends to study the mechanisms of the event integration process and test the hypothesis. In particular, research questions will specifically address the continuum cited above from an event integration perspective. Data are collected for the 19 most frequently used types of resultative complement from the five most representative works representing five historical stages, ranging from 1600 BCE to the present, a span of some 3500 years, see table 1 in Appendix A. The number of occurrences in the selected works for these 19 types of resultative is listed in table 2 in Appendix B. At present,19 resultative construction types have been identified, as listed exhaustively in table 3 in Appendix C (Shi 2018). These 19 types will be used as the basis for diachronic contrast. The evolutionary process undergone by each of the 19 resultative types will be examined individually through all five periods. And finally, some general mechanisms of event integration will be generated from the analysis.

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Appendix A: Table 1. Data collection

Stage	Period	Time span	Selected works	References	Tokens	Retrieval method
I	Archaic Chinese	BC 1600-24	Zuo Zhuan (Zuo's Commentary on Spring and Autumn Annals)	Zuo 2016	276707	Exhaustively searching for the occurrences of the 19 resultatives
II	Early Middle Chinese	25-618	Shi Shuo Xin Yu (A New Account of tales of the World)	Liu 2011	79093	
III	Late Middle Chinese	619-1279	The Annotation of Dunhuang Literature	Huang and Zhang 1997	319261	
IV	Early Modern Chinese	1280-1911	Yu Shi Ming Yan (Stories Old and New)	Feng 2014	139146	
V	Modern Chinese	1912-present	I Am Your Father	Wang 2004	149284	

Appendix B: Table 2. Occurrences of the 19 resultatives

	Archaic Chinese	Early Middle Chinese	Late Middle Chinese	Early Modern Chinese	Modern Chinese	
败/ bài/fail	0	28	32	11	7	78
成/ chéng/achieve	491	69	389	182	250	1381
穿/ chuān/cross	20	4	28	54	50	156
到/ dào/arrive	1	8	453	622	665	1749
掉/ diào/lose	3	0	6	3	32	44
定/ ding/fix	124	36	219	90	132	601
动/ dòng/move	0	31	149	91	241	512
够/ gòu/reach	0	0	0	1	59	60
9. 惯/ guàn/usual	0	0	4	14	29	47
10 破/ pò/break	1	20	92	51	29	193
11. 伤/ shāng/damage	0	8	74	23	53	158
12. 胜/ sheng/win	0	51	154	47	11	263
13. 死/ sǐ/die	452	39	344	175	44	1054
14. 透/ tòu/through	1	0	16	10	29	56
15. 醒/ xǐng /wake	2	1	11	33	34	81
16. 着/ zhe/wear	0	10	212	259	1088	1569
17. 中/ zhǒng/get	239	333	1330	592	244	2738
18. 住/ zhù/live	0	26	193	135	145	499
19. 走/ zǒu/walk	37	11	158	186	250	642
Total occurrences	1371	675	3864	2579	3392	11881

Appendix C: Table 3. 19 types of resultatives in Mandarin (revised from Shi 2018:96)

Focus relation		Integration type	Resultative types	Syntactic pattern
Same attributee		1. V1+R1	zhàn lèi/stand tired	S+VR
		2. V2+R1	xǐ lèi/wash tired	S+(V+NP)+VR
		3. V2+R2	tīng dǒng/hear understand	S+VR+O
		4. V2+R2	dǎo péi/reverse refund	S+(V+NP)+VR+O
		5. V3+R1	sòng yūn/send faint	S+(V+NP1+NP2)+VR
		6. V1+R3	pǎo wàng/run forget	S+VR+O
Different attributee		7. V1+R1	kū shī/cry wet	S+VR+O
		8. V2+R1	diǎn liàng/lit bright	S+VR+O
		9. V2+R1	kǎn dùn/cut duller	S+(V+NP)+VR+O
		10. V3+R1	jiāo bèn/teach stupid	S+(V+NP)+VR+O
		11. V3+R2	jiāo huì/teach	S+VR+O1+O2
Verb-focus	R ungrammaticalized	12. V1+R1	zǒu wǎn/leave late	S+VR
		13. V2+R1	chī zǎo/eat early	S+(V+NP)+VR
		14. V3+R1	jiāo chí/teach late	S+(V+NP1+NP2)+VR
	R grammaticalized	15. V1+R	zhàn zhù/stand hold	S+VR
		16. V1+R	zhuā zhù/catch hold	S+VR+O
		17. V3+R	jiāo wán/teach finish	S+VR+O1+O2
Verb as both causative and ergative		18. causative	qì sǐ1/anger dead	S+VR+O
		19. ergative	qì sǐ2/anger dead	S+VR

Modelling the typological shift of Chinese: Evidence from 使-shǐ-make and Macro-event at work

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Keywords: Event typology, Typological shift, Event integration, The Macro-event Hypothesis, Chinese

Theoretical background & research target – Chinese language underwent a dramatic typological shift from a synthetic language to an analytic one. The typological change is clear if we observe the evolution in the way in which causativity is expressed from Old to Modern Chinese. Mandarin expresses causativity mainly analytically, dominated by analytic causative constructions with 使-*shǐ-make* (SHI-cxn henceforth), with the form [NP_1+SHI+NP_2+V]. In contrast, in Old and Middle Chinese causativity was generally expressed by labile verbs (e.g., 树 shù 'tree/plant a tree') or morphological causatives (e.g., 食 *shí* 'to eat'/*sì* 'to feed'). The verb SHI is particularly intriguing because it is the only verb that is steadily used to express causativity from Old to Modern Chinese. Existing research on the diachronic change of SHI has unearthed rich insights into its polysemy in Old Chinese and pure causative use in Mandarin, based on which a lot is known about the qualitative aspects of its grammaticalization. However, there have been few attempts to systematically investigate the diachronic change of SHI with a quantitative and construction-based approach. This study is an attempt at bridging this gap by proposing a corpus-based diachronic analysis of SHI-cxn. Another point of focus is to investigate whether the two privileged semantic relations (*cause* and *manner*) that motivate typological change in the Macro-event Hypothesis (Li 2020), and the five types of macro-event (Talmy 2000), can be attested by SHI-cxn and its development.

Research questions – 1) Regarding the polysemous status of SHI in Old Chinese, what are the distributional features of SHI-cxn across stages of Chinese? 2) Does the development of SHI-cxn support the Macro-event Hypothesis? If yes, to what degree?

Data & method – Our dataset are extracted from the historical CCL Corpus (Center for Chinese Linguistics from Peking University). We follow Wang (1980) in periodization, viz. Old Chinese, Middle Chinese, Early Modern Chinese and Modern Chinese. Occurrences of SHI-cxn are collected and annotated regarding their syntactic, semantic, pragmatic and contextual features. We will report the distributional patterns of different uses of SHI-cxn first, and then use both exploratory and confirmatory statistical techniques to gauge the effect of the above-mentioned factors on the development of SHI-cxn.

Preliminary findings – A pilot study reveals 1) different degrees of host-class expansion across stages of Chinese, for instance, the verb collexemes of SHI in Old Chinese are dominated by activity verbs including 聘-*pìn-engage*, 盟-*méng-ally*, 伐-*fá-attack*, etc, representing action correlating events. In Mandarin, it preferably collocates with change-of-state verbs (e.g., 达到-*dá dào-achieve*, 充满-*chōng mǎn-fill…with*) and change-of-possession verbs (e.g., 得到-*dé dào-get*, 有-*yǒu-own*) (Liu & Li forthcoming), expressing stage change and realization events; 2) the verbs occurring in the V slot of SHI-cxn are mainly monomorphemic verbs in Old Chinese, whereas from Middle Chinese onwards, verb complex represented by resultative constructions, disposition constructions and serial verb constructions continues to increase.

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Reduplicative Verbs in Mandarin: Evidence for Talmy's Conflation Patterns

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Keywords: conflation, lexicalization patterns, verb reduplications, Chinese

Reduplication exists in many languages, including Mandarin. People frequently use it in their daily communication, which is conducive to bringing the reduplication phenomenon with the features of being colloquial in style, frequent in occurrence and pervasive (Talmy 2000). This study focuses on verb reduplications in Mandarin. Previous studies tend to analyze and discuss verb reduplications on a syntactic and semantic level, however, only a few researches pay attention to its conflation patterns. More specifically, there is few (if any) diachronic research about verb reduplications from a Talmyan three-way typological perspective. Thus this paper proposes to illustrate the conflation patterns of verb reduplications in ancient Chinese and contemporary Chinese from the three-way typological perspective. With a systematic and diachronic approach, this research divides Chinese into five stages, namely, archaic Chinese, early middle Chinese, late middle Chinese, early modern Chinese and modern Chinese (Li 2019). After searching in CCL (Center for Chinese Linguistics, Peking University) ancient Chinese corpus and modern Chinese corpus, it is found that there are seven forms of verb reduplications such as,

(1) VV construction

他 摇摇 头 (Author)
tā yáoyáo tóu
3SG shake head
'He shakes his head.'

(2) V_{AABB} construction

他 今天 下午 进进 出出 (Author)
tā jīntiān xiàwǔ jìnjìn chūchū
3SG this afternoon in out
'He is in and out this afternoon.'

(3) V Yi V construction

我 想一想 (Author)
wǒ xiǎngyīxiǎng
1SG think-FUT
'I will think!'

(4) V Le V construction

他 又 试了试
tā yòu shìleshì
3SG again-ADV try-PST
'He tried again.'

(5) V Le Yi V construction

我 在 附近 转了一转
wǒ zài fùjìn zhuàn le yī zhuàn
1SG LOC nearby-ADV go-PST
'I went round nearby.'

(6) V Zhe V Zhe construction

汽车 跑着跑着 着 火 了
qìchē pǎozhepǎozhe zháo huǒ le
3SG run-PROG catch-PST fire PST
'The running car caught fire.'

(7) V N V Le construction

我 看 书 看 了 很久
wǒ kàn shū kàn le hěn jiǔ.
1SG read-PRF book read-PRF PRF for a long time
'I have read my book for a long time.'

By collecting linguistic data in CCL, it is expected to obtain how the verb reduplications in Mandarin Chinese are lexically conflated in different periods of time.

The expected research findings may include the following: (1) the distribution features different forms of verb reduplications mentioned above; (2) the ways verb reduplications are lexically conflated in each stage of Chinese; (3) from a diachronic perspective, verb reduplications are under both grammaticalization and conflation, and the ultimate goal of this construction evolution is to achieve the lexicalization.

The research significance lies in that methodologically, it complements the empirical research on the three-way typology and diachronic research on verb reduplications in Mandarin; in addition, in the aspect of typology, this research illustrates verb reduplications in Mandarin in terms of conflation patterns, which makes a distinction between lexicalization patterns and conflation patterns.

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Diachronic Study on the Subjectification of the Verb-directional Construction "V 过-V guò-V (to) pass" in Chinese

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Keywords: subjectification, verb-directional construction "V 过-V guò-V (to pass)", diachronic, Chinese

Theoretical background & research target – The term "subjectification" refers to "a pragmatic - semantic process whereby 'meanings become increasingly based in the speaker's subjective belief state/attitude toward the proposition, in other words, towards what the speaker is talking about" (Traugott 1989:35, 1995: 31). The grammaticalization of the main verb "过- guò – to pass" ("guò" henceforth) (Mu 1989) allows the combination between the verb and the complement "guò", forming the construction "V 过-V guò-V (to) pass" ("V guò" henceforth) with the form [V + guò], in which "guò" can be a verb-directional complement, resultative complement and an aspect particle. Existing research on the diachronic change of the construction "V guò" has unearthed rich insights on the subjectification of the main verb "guò" as a resultative complement and an aspect particle (Zi 2008; Rao 2017; Kong 1986, 1995; Shen 2001). However, there have been few attempts to systematically investigate the subjectification of the verb-directional construction "V guò". And the existing analyses have not provided convincing evidence for the relationship between the grammaticalization and the subjectification from a macro-event (Li 2018) perspective, even though the verb-directional construction "V guò" shows obvious features of event integration (Talmy 2000). This study is an attempt at bridging this gap by proposing a corpus-based diachronic analysis of the subjectification of the verb-directional construction "V guò" in Chinese, as exemplified in (1-2), and the cognitive motivations correlated to grammaticalization of the main verb "guò" in Chinese.

(1) 有仙人行经**过**穴。(Six Dynasties: Baopuzi)
yǒu xiānrén xíngjīngguò xué
Have immortals walked and GUO the cave
'Immortal passing through the cave'

(2) 赛**过**祇园舍卫。(Ming Dynasty: Journey to the West)
sàiguò zhīyuán shěwèi
Surpassing GUO Gion Shiva
'Better than Gion Shiva'

Research questions

1) Whether the verb-directional construction "V guò" in Chinese has undergone a process of subjectification based on the three tendencies proposed by Traugott? And whether this construction can be considered as an epistemic marker?

2) how the grammaticalization of the main verb "guò" correlate to the subjectification of the verb-directional construction "V guò"? And what is the advantage of bringing the theory of event integration and macro-event hypothesis into this study?

Data & method -

Our dataset was extracted from the historical CCL Corpus (Center for Chinese Linguistics from Peking University). Regarding the turning point of the verb-directional construction "V guò", we divide the whole process into 4 stages. As demonstrated in Figure 1, 404 occurrences of the verb-directional construction "V guò" were collected. We will firstly report the subjectivity of the verb-directional construction "V guò" in the four stages respectively, and then use the three tendencies proposed by Traugott (1989, 1995) to analyze its subjectification. Here, the three tendencies in the subjectification of some expressions, listed as follows:

Tendency I: Meanings based in the external described situation > meanings based in the internal (evaluative/perceptual/cognitive) described situation.

Tendency II: Meanings based in the external or internal described situation > meanings based in the textual and metalinguistic situation.

Tendency III: Meanings tend to become increasingly based in the speaker's subjective belief state/attitude toward the proposition.

(Traugott 1989: 34-35)

And the macro-event hypothesis will be used to gauge the cognitive motivation inside the subjectification of the verb-directional construction "V guò".

		Han & Six Dynasties	Tang & Five Dynasties	Song Dynasty	Yuan & Ming & Qing Dynasties
Directional meanings	To cross/to approach	13	26	34	91
	Agent to move or chang direction by himself	1	0	5	31
	Patient made to change position or direction	0	7	32	77
Extended meanings	To spend	0	8	19	25
	To outreach proper point or location	0	8	12	2
	To surpass by competition, etc.	0	5	1	7
Total occurrences		14	54	103	233

Figure 1: The meanings of the directional construction "V 过-V guò-V (to) pass"

Preliminary findings -

We find that: (1) the verb-directional construction "V guò" underwent subjectification but has not developed into an epistemic marker. (2) Its subjectification is closely tied with the grammaticalization of the main verb "guò". By bringing the macro-event hypothesis into this study, this article provides a new perspective for the study of the subjectification of the verb-directional construction "V guò", bridging between the grammaticalization and the subjectification by indicating the shift of [PATH] in the motion event.

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On the Evolution of Chinese Resultative Constructions: A Case Study of "V-败 (bài; defeat/fail)" Constructions

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Keywords: Chinese resultative constructions, Construction grammar, Language change, Language typology, Macro-event

Chinese resultative constructions have been a highly-debated topic in the last few decades. Previous studies mainly focus on thematic relations (Li 1990, Zhao 2009) and syntactic movements (Hashimoto 1964, Thompson 1973) within the components of the constructions (Jiang 2019). Such explanations pay more attention to the composing parts of the constructions, but the gestalt properties of the resultative constructions should not be neglected as the constructions are depicted by features independent of their components, such as the transitivity of the constructions and the causative meaning represented by the constructions (Jiang 2019). Though great contribution has been made, few studies investigate the Chinese resultative constructions from a constructional view. In addition, a limited number of studies examine Chinese resultative constructions based on corpus data and from a diachronic perspective.

To narrow the gap, this study attempts to investigate Chinese resultative constructions quantitatively and diachronically. Specifically, a corpus-based case study is undertaken to track the diachronic change of the constructions based on the theoretical framework of construction grammar. We select one of the frequently-used and typical Chinese resultative constructions, i.e., "V-败(bài; defeat/fail)" constructions as the research targets, in which "败-bài" is an ergative verb with the meaning of "defeat" and "fail". This study mainly answers the following three questions: (1) What are the formal and semantic features of the"V-败(bài; defeat/fail)" constructions across the stages? (2) What evolutionary pathways do the constructions display diachronically? (3) What are the cognitive motivations for the evolution of the constructions?

The data are extracted from CCL Corpus of ancient Chinese, compiled by Peking University. It provides texts from a wide range of disciplines according to the dynasties in Chinese history. Traugott and Dasher (2002) classified the almost 3500 years history of the Chinese language into seven stages. Following Traugott and Dasher's (2002) classification and guided by the match between the stages and dynasties, we randomly select 100 instances per dynasty after deleting the repetitive and invalid concordance lines.

It is expected to present the constructional network of the "V-败(bài; defeat/fail)"constructions by analyzing the formal and semantic features across the stages. A pilot study indicates that there is a bridging context in which the constructions undergo a change of semantic preference from the action of defeating to the state of being failed. It is argued that the change might provide evidence for the typological shift of ancient Chinese. Moreover, it reveals that the "V-败(bài; defeat/fail)" constructions in Mandarin frequently represent the event of state change, as one of the five types of macro-event (Talmy 2000). The macro-event presented by the constructions may contribute to a more complex and abstract Chinese grammar system (Wang 1988).

This study contributes to the understanding of the evolution of Chinese resultative constructions per se, shedding light on the study of other Chinese resultative constructions, which might have implications for resultative constructions in other languages.

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A Diachronic Study on Chinese Complex Directional Complements "guòlái/come over" and "guòqù/go over": From the Perspective of the Macro-event Hypothesis

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Keywords: Chinese complex directional complements; the Macro-event Hypothesis; grammaticalization; the diachronic revolution of Mandarin

The complex directional complements in Mandarin have been widely studied. Most research on this topic focused on semantics (e.g., Liu 1998), sentence patterns (e.g., Xiao 1992), acquisition (e.g., Yang 2003), etc. Some studies also adopted the cognitive perspective such as exploring their image schemas (e.g., Ma 2005), but few, with the exception of the author's (2018, 2019) research, chose to explore the topic from the perspective of the macro-events.

Talmy's (1985, 1991, 2000a, b) well-known two-way typology is based on the fundamental concept of "macro-event". Languages, he claims, characteristically adopt either verb roots or satellites to encode the core schemas of the macro-events (Talmy 2000b: 222). Based on this framework, Talmy believed that Mandarin is a satellite-framed language, which has triggered a heated discussion over past decades (e.g., Li 2018; Shen 2003; Shi 2011; Shi & Wu 2014). Findings of the previous studies not only identified some challenges faced by the two-way typology, but also demonstrated that there are more general rules to express two relevant events and their semantic relations in languages, i.e., the Macro-event Hypothesis (Li 2019, 2020).

This Hypothesis contains three continuums, one of which is the grammaticalization continuum of some elements within one single clause. Li's (2018, 2019) findings have preliminarily confirmed this continuum by studying the 11 simple directional complements diachronically, but the 17 complex directional complements have not been investigated yet. Therefore, to justify the Hypothesis empirically, this study aims to probe into "guòlái/come over" and "guòqù/go over" diachronically. It also sheds light on how and why the 11 simplex directional complements, particularly "lái/come" and "qù/go", could be collocated with each other and further grammaticalized into complex directional complements (see Li & Liu 2021).

Through retrieving data from the CCL corpus (Zhan & Guo & Chen 2003) across five Chinese historical periods (BC1046-present), this study supports the grammaticalization continuum in the Macro-event Hypothesis. Firstly, it was not until Stage II that "guòlái/come over" and "guòqù/go over" were used together, but they acted as nouns in the single clauses. In Stage III, they developed to be collocated with other verbs, but the degree of grammaticalization was low since most could only encode motion events, with few expressed state changes. However, in Stage IV, they expressed more event types such as realizations, which confirms this continuum. Additionally, it indicates that the Path element regarding space encoded in "guò/past", "lái/come", and "qù/go" enables them to collocate together and further be grammaticalized, allowing them to extend other meanings of time and match with the main verbs encoding the co-events. For "guòlái/come over" and "guòqù/go over", the Path element encoded in them also allows their degree of grammaticalization to deepen. It first referred to changes in space, which could only encode motion events. However, since it can be extended to the time dimension, the two words could express other types of events such as state changes and realizations.

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An Event Integration Approach to Chinese Instrumental Constructions

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Keywords: Chinese instrumental constructions; event integration; continuum; cognitive mechanism

Previous literature reveals that instrumental constructions (ICs) in Chinese are broadly divided into three types: marked instrumental constructions, instrument-subject constructions and instrument-object constructions. The first refers to ones whose instrumental components are introduced by prepositions, like 用 yòng, 拿 ná and 以 yǐ, while the last two are without prepositional markers:

(1) a. Marked instrumental construction:
我 用 这 把 刀 切 肉。(Wu 1996)
wǒ yòng zhè bǎ dāo qiē ròu
I YONG this CL knife cut meat.
'I cut meat with this knife'.
b. Instrument-subject construction:
那 台 缝纫机 做 了 三 百 套 衣服 了。(Wang 1984)
nà tái féngrènjī zuò le sān bǎi tào yīfú le
that CL sewing machine make LE three hundred CL clothes LE.
'That sewing machine has made three hundred suits of clothes'.
c. Instrument-object construction:
吃 大碗。(Shao 2015)
chī dà-wǎn
eat big bowl.
'Eat with a big bowl'.

(1a) demonstrates a situation where the instrument 刀 dāo 'knife' is introduced by prepositional marker 把 bǎ. (1b) and (1c) show cases where there are no markers, but the instrument 缝纫机 féngrènjī 'sewing machine' in (1b) functions as the subject, while the instrument 大碗 dàwǎn 'big bowl' in (1c) serves as the object.

The three-way classification is based on syntax without considering semantic factors and thus couldn't exactly reflect the overall picture of the family of ICs. Furthermore, despite the same conceptual concepts - all ICs basically contain "instrument-manipulation event" and "act-on event", different syntactic representations imply distinct features of event integration. Moreover, previous studies mainly focus on a certain type of ICs (Wang 1984; Wu 1996; Shao 2015), don't consider the whole family of ICs, let alone explore how different ICs are structured and how event integration is at work in forming different ICs.

This study, with data collected from BLCU Corpus Center (BCC) and from previous literature, aims to comb the family of ICs, and explores the degree of event integration of different ICs and the cognitive mechanism behind them under the framework of event integration theory (Talmy 2000) so as to contribute to the reclassification of ICs family and the exploration of the structuring of different ICs.

Put concretely, this study takes the roles instrumental elements play, namely intermediary or facilitating roles (Koenig et al. 2007), into consideration, and divides ICs into 8 types. This study is on instrumental category, whose prototypical concept is "Agent-Instrument-Patient". However, syntactically, this sequence is not always integrally shown in concrete ICs, like object-instrument constructions. Therefore, this study creatively proposes "overt events / total events" and states that the higher the ratio is, the lower the degree of event integration is. It's found that the family of ICs exhibits a continuum of the degree of event integration. This study also reveals that the cognitive mechanism behind the structuring of ICs is event integration, which is three-folded: (1) event integration falls into single-chained or double-chained; (2) apart from explicit argument integration, implicit argument integration is also the hub of event integration; (3) the mismatch between predicates and arguments is an essential aspect of event integration.

At the global level, this study is the first attempt to apply event integration theory to ICs and more concrete studies can be conducted on (non-prototypical) ICs or on the representation of the instrumental category in other languages and finally contribute to typological studies on instrumental category in the future.

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The Semantic Continuum from Disposition to Causative Meaning: Diachronic Changes of Chinese Disposition Construction

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Keywords: Chinese disposition construction, gradualness, language change, control

The gradualness of changes has been a concern of grammatical constructionalization. It is assumed that language advances in rather slight and tiny steps that language users usually note no difference (e.g., De Smet 2012, Fischer 2018). The underlying motivation is attributed to analogy, especially its influence on the morphosyntactic changes. This study further argues that semantic features also expand in a gradual way.The supporting evidence comes from the Chinese disposition construction "NP_1+ bǎ+NP_2+VP", in which *bǎ /*把 is a preposition marking theme/patient, and the object, NP_2, precedes the predicate VP. The construction as a whole denotes the meaning of disposition or domination. For example,

他把桌子擦干净了。
tā bǎ zhuō zǐ cā gān jìng le.
3.SG DISP table wipe clean.
'He wiped the table clean.'

Existing studies have indicated that the constructionalization of "NP_1+ bǎ+NP_2+VP" took place in the Tang Dynasty (618-907) and constructional changes followed afterward. To illustrate its changes, we aim to address three questions: in each dynasty from the Tang (618-907) to the Qing (1644-1911), (1) how might different slots in the construction change both semantically and syntactically? (2) how did slots interact with each other? and (3) how did changes in the slots influence the semantic changes of the whole construction?

Our data are retrieved from the Peking University CCL Corpus of ancient Chinese, an online corpus of more than 200 million characters. This corpus includes text samples distributed across such genres as poems to novels from the Zhou (1100-771BC) to the Qing Dynasty (1644-1911), thus making an ideal corpus for diachronic study. We randomly sampled 200 instances per dynasty after excluding invalid cases. All extracted constructions are annotated for seven linguistic factors (c.f., Levin 1993, Givón 2001, Beavers 2011, Levshina 2022), namely the semantic type of the causer (animate, abstract, natural force, events, and inanimate) and causee (animate, abstract things, natural force, and inanimate), the semantic role of the NP_2 (agent, sentient, causer, theme), the semantics of VP (psychological change, appearing, disposing of, moving, etc.), the volition of the causer (volitional, non-volitional), the affectedness of the NP_2 (quantized change, non-quantized change, potential for change, unspecified change), and the degree of causation (direct causation, indirect causation). The annotated data are analysed by multidimensional scaling, random forest analysis, and inference trees.

It is predicted that the construction forms a continuum from more of a disposition meaning to a more causative meaning, during which process the semantics of the VP_2 plays a major role. More specifically, the manipulation of NP_1 to NP_2 is decreasing while the controlling of NP_2 to the event described by the VP_2 increases. To some extent, the series of changes are discrete micro-changes, and such micro-steps provide preconditions for the later macro-changes. This study further illustrates the gradualness (Traugott and Trousdale 2013) and diffusion (De Smet 2016) in the process of language change.

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Attraction and Differentiation: Diachronic Developments of the Chinese Disposition Alternation

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Keywords: Chinese disposition alternation, attraction, differentiation, analogy, usage-based approach

Constructions are thought to be stored in an associative network where constructions sharing formal and functional properties are connected to each other. Constructions fulfilling a similar function can compete or cooperate (e.g., Zehentner 2019), during which process, they can be attracted to or differentiated from each other (e.g., De Smet et al 2018). And the underlying mechanism is proposed to result from analogy (or analogization). This study, by adopting a usage-based approach to language change, seeks to explore the diachronic changes of Chinese disposition alternation.

Chinese "NP1+BA+NP2+VP" constructions, termed disposition constructions, are characterized by the object being put in front of the predicate with an auxiliary verb, namely BA, to express a kind of disposition meaning. BA can be exemplified by "bǎ/hold" and "jiāng /lead", the two most frequently used ones today, apart from "qǔ / take", "zhuō /seize", and "chí /grasp" that performed this function in Medieval Chinese. The disposition constructions, as a unique construction to Chinese, have received considerable attention (e.g., Thompson 1973, Peyraube and Wiebusch 2020, Fang and Liu 2021). However, relatively little, if any, research has paid attention to the disposition alternations. This study aims to quantitatively address the diachronic development of Chinese disposition constructions, focusing on the two exemplifications, namely "NP1+ bǎ+NP2+VP" and "NP1+ jiāng+ NP2+VP". The examples are below:

大人[把]左右暂退出去。（清《彭公案》）
dà rén [bǎ] zuǒ yòu zàn tuì chū qù.
grown-up DISP left right temporarily retreat out go.
His excellency, order his attendants to clear out. (The Qing Dynasty, *Cases of Peng Gong*)'

智化要[将]柳青带入水寨。（清，《七侠五义》）
zhì huà yào [jiāng]liǔ qīng dài rù shuǐ zhài.
Zhihua Will DISP Liuqing take into water village.
'Zhihua will take Liuqing to the water village. (The Qing Dynasty, *Seven Knights and Five Chivalrous Men)*'

The questions are how these two functionally similar expressions are likely to undergo over time, and whether they are becoming more similar or more differentiated (e.g., De Smet et al 2018, Traugott 2020). The data are retrieved from the Peking University CCL Corpus of ancient Chinese, an online corpus of more than 200 million characters. By examining the syntactic and semantic features of each slot in the constructions and adopting the method of chi-square test and multidimensional scaling technique, the study found that "bǎ" and "jiāng" constructions show an increasing tendency of overlapping conceptual space; not only do "bǎ" and "jiāng" compete, but they have similar patterns of development by modeling after the ways the other have taken; the division of labor between the two constructions is formed in a rather gradual way. The results further contribute to the theories of language changes, especially actualization, attraction and differentiation by assuming that differentiation can also happen at concrete levels.

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Grammatical Constructions and the Usage-Based Model

Convenors: Dylan Glynn, Olaf Mikkelsen & Piotr Wyroslak

Constructions and grammatical categories: Do rules facilitate language acquisition?

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Keywords: Acquisition, case, Keyword3

The morphological category of «case» is well established in linguistic theory, yet subject to language- and item-specific spell-out, such that it is a very heterogeneous morphological category (Eisenbeiss et al. 2010). In German, four cases are distinguished as overarching categories governing nominal inflection, with the genitive becoming rare and construction-specific, and the more frequent and more varied dative showing a long developmental trajectory with error patterns ranging well into school-age (Szagun 2019). The morphological realization of case differs between different types of determiners, pronouns and adjectives, as case-marking correlates with gender, number, and (in)definiteness. The acquisition research on German has focused on the acquisition of case within particular part-of-speech categories like personal pronouns or nouns, where a distinction between structural, verb-governed and versus lexical case as required by prepositions is made. From an input-driven and constructivist approach, we do not expect rule-based acquisition of structural case across constructions, such that the global question “when do children acquire ‘case X’?” is a misconception. In line with usage-based and Radical Construction Grammar (Croft 2001) proposals I will argue that overt case marking starts from construction- and lexically-specific islands, e.g., case-marked pronouns with certain verbs, or case-marked determiners with certain prepositions. In a second step, I will investigate the types of evidence needed to conclude that case is an “abstract” category within formal and functional network structures (Diessel 2019).

The analyses are based on longitudinal and morphologically annotated corpora of six German children (age range 1;11-7) and their input with a total of 3.5 million words, 850000 of which are produced by the children. The presentation focusses on the emergence of the dative (with a total of 161000 words in dative contexts, of which 33500 in the children’s data). It will first be shown that lexical prepositional case, for example, develops in an item-specific fashion with just a few prepositions initially, before it is extended to other prepositions and more variable instantiations of the dative object. Second, regarding structural case, analyses of the few high frequency verbs requiring the dative (like *give/take*) show that the object is often realized by unmarked proper nouns or a limited set of personal pronouns. Hence, the child is confronted with a system of vast variation regarding possible instantiations of the dative, but complexity reduction by proper nouns and pronouns, which are less variable case and gender marked determiners.

Regarding the topic of the theme session the following conclusions can be drawn: Case-marking is prolific across constructions and highly variable in its instantiation. This makes chunked-based learning of verbs plus case-marked pronouns/determiners highly unlikely, especially when one takes the morphologically even more variable pre-nominal adjectives into account. Likewise, rule-based explanations are unlikely because of the variable spell-out of case. In line with usage-based acquisition theory and exemplar models (Ambridge 2020a, 2020b), extended trajectories of item-specific patterns with local generalizations are expected. At the same time, the variability observed in the prenominal slots will foster abstraction, leading to uncertainty and high error rates in which affix to choose.

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What's Construction Grammar doing Usage-Based?

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Keywords: Construction Grammar, usage-based, metatheory, formalisms

What does "usage-based" mean to construction grammarians practicing different flavors of Construction Grammar (CxG)? To answer this question, this talk is structured into three parts. The first part briefly traces how the term "usage-based" has evolved in the literature since Langacker (1987) first coined the term "usage-based approach." More specifically, we show how practitioners of different flavors of CxG such as Fillmore & Kay (1993), Goldberg (1995), Bergen & Chang (2005), and Sag (2012) employ the concept of "usage-based" in their CxG approaches. We propose that even though these different flavors of CxG all refer to the use of authentic, natural language as data for the formulation of their linguistic insights, they differ substantially in how they put this idea into practice.

Part two of the talk takes a different perspective by offering insights from an online questionnaire conducted in the spring of 2021 among construction grammarians, parts of which were presented at the ICCG Roundtable on the Future of Construction Grammar in Antwerp in the summer of 2021. To elicit thoughts and opinions from our colleagues, we included a statement "It's my impression that all flavors of CxG are usage-based." Participants provided their answers on a 5-point Likert scale ranging from "I strongly agree" to "I strongly disagree," and they were given the option of providing further insights in the comment section. The results to this question show that there appears to be widespread differences in opinion in how different flavors of CxG employ a usage-based methodology. 21% or participants strongly agreed with the statement, 31% somewhat agreed with it, while 12% neither agreed nor disagreed with it and 23% somewhat disagreed with it and 13% strongly disagreed with it.

The third part of the talk focuses on the verbal comments to the question mentioned above. While the comments rarely spell out explicitly what "usage-based" means to different respondents, they do reveal certain trends. A significant number of respondents point out that some variants of CxG are more usage-based than others. Notably, more formalization-oriented variants, such as Sign-Based CxG and Fluid CxG, are viewed as less usage-based than others. On the other hand, what seems like a vast majority of the respondents express a positive view towards usage-based approaches: whether or not they view some or all variants of CxG as usage-based, they feel that CxG at least should take a usage-based view.

Overall, we aim to point out different conceptions about the notion of "usage-based" among construction grammarians, and to correct the apparently common misconception that formalization, within CxG or in general, is somehow in conflict with the usage-based ideology. We also intend for this overview of different opinions about various notions of usage-based to inform both future discussion and, hopefully, future practice.

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Inheritance as a useful notion in a usage-based constructicon

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Keywords: construction grammar, inheritance, usage-based

In constructionist approaches to grammar, linguistic knowledge consists of a structured inventory of constructions (sometimes referred to as the constructicon). This structure consists of relations (or links) between constructions and has been conceptualised using notions including instantiation, sub-part links, prototypicality and extensions, amalgamation (or multiple parenting) and metaphorical links (e.g. Goldberg 1995:75-81; Hilpert 2014:63). All of these may be described as inheritance relations, but this presentation will focus on instantiation which has featured prominently in constructionist theory as a means to capture generalisations across constructions at differing levels of abstraction. Although understood variously in different constructionist frameworks, the notion of inheritance through instantiation is typically understood to mean that more substantive constructions inherit features from one or more related, more abstract constructions. Such an asymmetric relationship allows both a structuring of relations and the avoidance of (some of the) redundancy in a network.

This paper explores the extent to which the notion of inheritance is useful or even compatible with a usage-based understanding of constructions, based on theoretical considerations and a series of case studies of constructional networks anchored at the substantive (e.g. phraseological) end of the schematicity spectrum. Specifically, I show that:

1) Inheritance may encourage the positing of unnecessary levels of abstraction (e.g. a novel utterance like ‘long time no hear’ or LTNW (‘long time no write’), constructed from the expression ‘long time no see’, should not necessitate the existence of a partially schematic representation such as ‘long time no [verb of perception]’ to explain its existence).

2) The uni-directionality (the asymmetry of links) implied by the notion of inheritance is problematic. Psychologically plausible acquisition paths (early L1 as well as naturalistic L2 learning) suggest an ‘inverted’ inheritance from substantive to more schematic representations during acquisition which has to be reversed in the mature language user if 'a given construction is motivated to the degree that its structure is inherited from other constructions in the language' (Goldberg 1995:70). But continuous change in linguistic knowledge throughout the lifespan must mean that such a reversal point is never reached for the whole constructicon and suggests that directional complexity is likely the norm.

3) If redundant storage is allowed, the concepts of generalisation and instantiation may be more informative than the idea of inheritance and may render it superfluous as a theoretical concept.

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Nodes, links, and psychological plausibility: A case study of the *make*-causative

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Keywords: Construction Grammar, constructicon, network, corpus linguistics, self-paced reading

Construction(s), or node(s), and their links to other nodes in the network of linguistic knowledge are of course central to constructionist approaches. While the classic focus is on nodes (Goldberg 1995), current discussions in the field put a much stronger focus on the links between the nodes (Diessel 2019, Schmid 2020). This development aside, the "existence" or psychological reality of constructional nodes is by no means widely accepted outside the family of constructionist approaches. This may in part be due to the fact that (a) we gather much of the empirical evidence for nodes from corpora or via experiments that use stimuli based on a priori assumption of constructions. In addition, evidence from reading-time experiments can often be accounted for by general processing factors, such as, but not limited to, transitional probabilities.

This talk discusses the opposing predictions of the constructionist approach viz. general processing with respect to reading times of a "classic" argument structure construction. Two self-paced reading experiments on the *make*-causative (e.g., *she made them believe the story*) measured the reaction time of V_2 (e.g., *believe*). Previous research would predict that the reading time of the second verb depends on factors that increase processing costs such as object complexity (e.g., a personal pronoun vs. full/complex NP). In this pilot study using two variants of the maze paradigm (Boyce et al. 2020, Forster et al. 2009), we found that, overall, (i) V_2 RT is neither predicted by (verb) frequency, nor by object complexity, nor by transitional probability, but (ii) by how much the verb is statistically associated with the pattern. The former provides evidence for nodes (e.g., the absence of an effect of length between V_1 and V_2), whereas the latter is not unexpected given that the strengths of links between nodes can varies (commonly operationalised as "collostruction strength" or "surprisal").

While a complex picture emerges in the details, predominantly due to the task and its limitations, the results do suggest that the constructionist approach can account for these results better and more comprehensively beyond general processing-related factors. The results can be interpreted such that they provide evidence for the "reality" of constructions, but they are also insightful for current theoretical and methodological discussions within a constructionist and usage-based models of linguistic knowledge, especially concerning the links between nodes at different levels of specificity.

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Emergent Constructions
A case study in modelling the composite structure in a non-modular non-discrete grammar of the STEAL event frame.

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Keywords: Construction Grammar, corpora, usage-based model

This study takes the usage-based model (Hopper 1987, Langacker 1987) and its descriptive implications and asks how we can quantifiably and predictively account for language structure given this model. Following the arguments of Boas (2003), Glynn (2004) and Schmid (2020), the approach here adopts the premise that grammatical constructions should be identified in an entirely bottom-up manner. Moreover, instead of form-meaning pairs, constructions must be understood as combinatory clusters of formal and semantic characteristics of use. In order to test the feasibility of approaching grammatical constructions in these terms, the study examines a set of forms used to express stealing in contemporary English.

Since it is not possible to search corpora for concepts, such as STEAL, the first step is to establish a list of all the possible lexemes / expressions used to express this concept. This is achieved by consulting reference dictionaries and thesauruses, establishing a quasi-exhaustive list of potential expressions for the concept. The ensuing 'keywords' are in turn used to retrieve all STEAL occurrences from the LiveJournal Corpus of English (Speelman & Glynn 2005). The data are manually examined to check for issues of polysemy / random false positives. Only occurrences where the *actus reus* is unquestionably 'taking' without consent and the *mens rea* is one of intention are retained. The relative frequency of each lexically derived STEAL expression is in turn used to calculate and extract proportionally representative sub-samples of each expression. In total, approximately 2000 occurrences are retrieved.

This usage-based and lexical approach reveals several lexico-syntactic patterns, including the already established alternation between rob-steal described by Goldberg (1995). The ROB-STEAL constructions are instantiated by a wide range of predicates, but only a few are frequent (cheat, nick, take, steal, rob). However, preliminary investigation largely corroborates the findings of Glynn (2004) identifying several constructional variants on the above forms as well a 'family' of other constructions that profile the path of the event [GO + *off with*] and [GO + *away with*]. The lexically determined subsamples of instances of STEAL are then submitted to a behavioural profile analysis (Dirven *et al.* 1982, Geeraerts *et al.* 1994, Divjak & Gries 2006). Care is taken to annotate both formal variation and semantic variation independently. The annotation schema is derived from the attribute matrix of the FrameNet entry for STEAL and is supplemented with more fine grained semantic variables such as valence (degree of positivity / negativity motivating the theft), arousal (degree of impact upon the injured party), both operationalised with 9-point Likert scales and subjected to multiple coding.

The quantitative analysis of the resulting behavioural metadata is expected to reveal complex patterns where various semantic features cluster with sets of formal features. Exploratory complexity reduction techniques, such as correspondence analysis, will first be used to identify clusters of form-meaning combinations, interpretable as non-discrete 'constructions'. The significance of these feature combinations will then be determined using loglinear analysis. Any significant sets of combinations of formal-semantic pairings will be interpreted as emergent, entirely bottom-up, evidence for functionally motivated language structure / grammatical constructions.

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English clippings and their source words: A constructional perspective

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Keywords: clipping, morphology, meaning, distributional semantics, constructions

This paper uses corpus data and methods of distributional semantics in order to study English clippings such as dorm (< dormitory), memo (< memorandum), or quake (< earthquake). We investigate whether systematic meaning differences between clippings and their source words can be detected. Alber and Lappe (2012: 314) observe that semantic questions have received relatively little attention in the study of clippings, and they remark that systematic studies of meaning in truncatory processes are virtually absent. The present paper tries to address that gap.

Our analysis is based on a sample of 50 English clippings and their source word counterparts. Pairs such as cardio-cardiovascular, chemo-chemotherapy, and intro-introduction are analyzed in terms of their collocational behavior. Each of the clippings is represented by a concordance of 100 examples in context that were gathered from the Corpus of Contemporary American English (Davies 2008). We compare clippings and their source words both at the aggregate level, and in terms of comparisons between individual clippings and their source words.

The aggregate comparisons reveal general distributional asymmetries that suggest a difference relating to involved vs. informational text production (Biber 1988). Clippings have a relatively greater tendency to appear in texts with contextual elements such as first or second person pronouns, demonstratives, or contractions. Clippings thus appear to be preferred in contexts in which there is substantial common ground between speaker and hearer, which aligns with the notion that clippings signal familiarity with the ideas that are conveyed (Wierzbicka 1984, Katamba 2005).

For the individual comparisons between clippings and their source words, we draw on the distributional semantic method of token-based semantic vector spaces (Hilpert and Correia Saavedra 2020). The method allows us to pinpoint aspects of meaning that are specifically associated with a clipping, rather than its source word, and vice versa, while also revealing how their respective meanings overlap. Our findings show that clippings such as chemo and cardio are semantically distinct from their source words, but we also document cases such as fridge, in which the collocational profile of the clipping is indistinguishable from that of the source word.

We interpret these findings against the theoretical background of Construction Grammar and specifically the Principle of No Synonymy. Following Levshina and Lorenz (2022), we argue that speakers' choices between clippings and their source words are motivated by meaning rather than by efficiency. For cases in which clippings overlap semantically with their source words, we documented facets of meaning that are preferentially or even exclusively expressed by one of the two alternatives. We take these results as an indication that the Principle of No Synonymy holds up surprisingly well with regard to English clippings.

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Usage-based Construction Grammar as the cognitive theory for post-colonial Englishes

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Keywords: Construction Grammar, Dynamic Model, Post-colonial Englishes, productivity

Today, English is spoken all over the world. In addition to British English or its use as a lingua franca, there are many varieties of English that historically arose in colonial settings. These include L1 varieties such as American English or Australian English as well as L2 varieties such as Kenyan English or Hong Kong English. As Schneider (2003, 2007) argues, the evolution of these 'post-colonial' varieties crucially depends on the social interaction of the colonizers (the "settler (STL) strand") and the various indigenous people (the "indigenous (IDG) strand"). He postulates five evolutionary phases that new post-colonial varieties could successively go through and that would be affected by distinct social, historical as well as political conditions:

Phase I ("Foundation") refers to the time when English is first transplanted to a new colony. At this point, communication between the STL and IDG strands is limited, which only leads to the borrowing of a few salient lexical items such as place names into the local variety of English. While the STL strand then gradually adapts to its new home in Phase II ("Exonormative Stabilization"), its (socio-)linguistic identity remains essentially British. During Phase III ("Nativization"), mainly after the political independence of the former colonies, this changes and the settlers accept the colony as their new home. Contact and linguistic negotiation between the two strands then leads to "structural nativization", i.e., large-scale linguistic effects, from lexical borrowing and the development of a local accent to morphological, grammatical and syntactic innovations (Schneider 2007: 71–112). This stage is followed by Phase IV ("Endonormative Stabilization"), in which the novel linguistic norms are "accepted as adequate also in formal usage" (Schneider 2003: 250) and the new variety of English is characterized by great linguistic homogeneity. The final stage of the Dynamic Model is Phase V ("Differentiation"), when the variety differentiates into new regional and social dialects.

The Dynamic Model is a sociolinguistic model that sees linguistic changes as arising from forces related to identity-construction. Recently, Hoffmann (2021) offered a cognitive, usage-based Construction Grammar perspective to this, outlining how the various phases of the Dynamic Model correlate with an increasing schematization of constructions. In this talk, I will show how usage-based Construction Grammar can serve as an explanatory cognitive theory for the Dynamic Model. I will showcase how sociolinguistic as well as cognitive factors interact in the emergence of New Englishes, illustrating the approach with case studies from the lexicon-syntax cline, including, *inter alia*, the *Way* cxn, the V *the* Taboo *out of* cxn, and the *As* ADJ *as a*(*n*) N construction.

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From ‘no synonymy’ to ‘no equivalence’

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Keywords: Construction Grammar, no synonymy, no equivalence, competition, semantics, pragmatics, social meaning

This article presents a critical discussion of the ‘principle of no synonymy’ as spelled out in Goldberg (1995). We will turn down recent objections that have been raised against this principle and we will argue that it only needs to be conceptually fine-tuned under a new name, the principle of no equivalence.

Goldberg’s (1995, 67) *principle of no synonymy* features among the foundational conceptual tools of Construction Grammar. This principle states that when two constructions differ in form, they must be semantically or pragmatically distinct. In recent years, increasing concerns have been raised as to its theoretical and descriptive accuracy however (e.g. Kinsey et al. 2007; Uhrig 2015; Laporte et al. 2021), leading Uhrig (2015) to argue that it is largely ‘overrated’. The aim of this paper is twofold. First, we present a critical discussion aimed at answering these concerns. This means considering potential theoretical points of contention within Construction Grammar (especially with the concepts of *preemption* and *allostruction*) and looking into alleged empirical counter-evidence (with particular focus on the zero/*that* alternation and subject-extraposition constructions in English). After careful examination of each claim, we contend that the principle of no synonymy is neither overrated nor inaccurate. Second, we argue that the principle would gain in precision and explanatory power if it were to be conceptually fine-tuned under a new name:

> *The Principle of No Equivalence*: If two competing constructions differ in form (i.e. phonologically, morpho-syntactically or even orthographically), they must be semantically, pragmatically and/or socially distinct.

This is primarily motivated by the observation that the (construction grammarian) principle of no synonymy is too often narrowly interpreted as the principle of no ‘semantic’ (i.e. truth-conditional) synonymy. This is also motivated by the observation that the notions of competition and distributional niche are crucial to understanding the principle and that, alongside the ‘semantic’ and ‘pragmatic’ types of meaning, the notion of ‘social’ meaning is another crucial factor that needs to be taken into account in order to understand aspects of (individual) variation and change.

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Construction, allostruction or general pattern?

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Keywords: Construction grammar, psycholinguistics, first language acquisition, Spanish, frequency, semantic transparency

The present study investigates the acquisition of Spanish relative sentences by 7–8-year-olds as a window into the mental representations of grammar and, most precisely, as a test to whether two apparently related structures can be subsumed as the same construction within a CxG framework. These two structures were object relatives (ORs) with two nominal NPs and either with or without the preposition *a* + a definite article marking the complementizer (e.g., *el niño que el abuelo abraza vs. el niño* ***al*** *que el abuelo abraza* 'the boy that the grandpa is hugging'), which we will henceforth refer to as plain-variant and a-variant, respectively. The two variants convey essentially the same meaning and the form is the same except for the presence/absence of an optional element (Demonte, 1999). However, this very same optionality and the fact that there are subtle usage differences between the plain- and a-variant in terms of register and modality (i.e., the a-variant is less common in informal registers and spoken language; Reali, 2014), make the constructional status of these structures unclear.

We assessed the comprehension of the two OR variants by means of a picture selection task and a pre-test - post-test design with an intervening training phase. Crucially, the training phase only involved one of the two OR variants, which allowed us to assess to what extent training with one variant generalized to the other variant. Results showed that children were consistently more accurate with the plain-variant than the a-variant both at pre-test and post-test and that they improved more for the trained variant than for the untrained one. We take both the accuracy difference across the board and the difference between the trained and untrained variant after training to suggest that the two OR variants are represented in the early stages of acquisition as two separate yet closely related constructions rather than the same construction. Furthermore, the higher accuracy for the plain-variant, which is far more frequent in spoken Spanish (Butler, 1992) but semantically less transparent than the a-variant (del Río, López-Higes & Martín-Aragoneses, 2012), provides further evidence of the key role that frequency plays in first language acquisition (e.g., Abott-Smith & Tomasello, 2006).

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Schemas, chunks and everything between: Evidence from Germanic and Romance.

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Keywords: future tense, construction grammar, schematicity, corpus linguistics, statistical modelling

The typological literature on European languages (Fleischman 1982, Bybee, Perkins & Pagliuca 1994, Dahl 2000) points to a fundamental divide between intention-based futures on the one hand, and prediction-based futures on the other. The former would typically be used to describe future situations that are intentional, temporally close, psychologically certain, and unconditional; the latter situations that are non-intentional, temporally remote, psychologically uncertain, and conditional. Examples of the first would be futures derived from movement verbs (*going)*, examples of the latter would be Romance morphological futures or Germanic *will*. In this talk, we look at the future alternations in English, Norwegian, French and Spanish from a usage-based perspective and ask whether the encoding is best explained in terms of schematic generalisations, (partially or fully) lexically specific chunks, or a combination of the two strategies (Dabrowska 2020). To answer this question, a three-step analysis will be carried out. First, a distinctive collexeme analysis (Gries & Stefanowitsch 2004) is used to identify significant chunks; second, behavioural profile analysis (Divjak & Gries 2006) is used as a proxy for schematic meaning differences; third, a quantitative and qualitative assessment is used to evaluate the interactions between the two first.

To assure the comparability of the data, it is extracted from corpora consisting of online personal blogs for each language. A total of 400 000 future constructions are annotated for subject/grammatical person and lexical verb to produce the input for the collexeme analysis. This makes it possible to go beyond a simple list of verbs and produces a more fine-grained (and cognitively plausible) output of the type *NP (not) going to happen*, *(what) are you going to do*, or *we'll see*. From the complete dataset, a subsample of 2200 items is then manually annotated for a series of usage features based on the abovementioned semantic dimensions (intentionality, temporal proximity, speaker certainty and conditionality). To assure replicability of the results, every example is annotated blindly by two annotators for every language. Multifactorial statistics is then used to model the correlation between each future construction and the semantic variables. Separate analyses are conducted for each language. Finally, the association score for each pattern (subject/grammatical person + cx + verb) is added as a predictor in the statistical model as a way of measuring the relative contribution of the subject/grammatical person and verb to the schemas.

In conclusion, this talk looks at differences and similarities between etymologically similar constructions across related languages at two different levels of abstractions (chunks and schemas). It asks (i) whether we will find significant differences between similar constructions, such as English *will* + inf and Norwegian *vil* + inf, or French *aller* + inf and Spanish *ir a* + inf; (ii) whether the results will be coherent between the two levels of abstractions; and finally (iii) how much the chunks influence the schemas.

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Complex words as shortest paths in the network of lexical knowledge

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Keywords: grammar network, complex words, morphological constructions

Models of word recognition diverge on the question of how to represent complex words. Under the morpheme-based approach, each morpheme is represented as a separate unit (Pinker, 1999) while under the word-based approach, morphemes are represented in lexical networks (Bybee, 1995; Baayen et al., 2015). The word-based approach is consistent with construction morphology (Booij, 2010) and recent research on the grammar network (Diessel, 2019). However, while the network view of constructions has become popular in recent years, there is little computational and experimental research on this topic.

In the current study, we used a network model and an experiment to investigate the Latinate component of English morphology. Specifically, we assumed that complex words can be conceptualised as paths in a weighted directed network of morphemes. The edges of the network have different weights that are determined by usage frequency. New words are created easily if they follow well-trodden paths.

The network construction process ran as follows. We created a graph G = (V, E), such that $V = V_{Lb} \cup V_{dm}$, where V_{Lb} is a set of vertices that represent the 100 most frequent Latinate bases and V_{dm} is a set of vertices that represent all derivational morphemes encountered in 12,950 unique English lexemes with these bases. For any pair of morphemes v_i and v_j, the edge $v_i \rightarrow v_j$ was added to the set of edges E only if this sequence of morphemes was attested in at least one lexeme in the data. The total number of such lexemes was assigned to the edge as its weight.

If this network is an accurate representation of lexical knowledge, one expects to find (1) that the attested words will represent the most heavily weighted ('shortest') among all possible paths connecting their initial and final morphemes, and (2) that, in an experimental setting, unattested 'possible' (Aronoff, 1976) words derived along the shortest paths will get higher acceptability ratings and require less decision time.

To test hypothesis (1), we constructed for each word in the data all possible paths connecting its initial and final morphemes and going through its base. After arranging the paths in the descending order of the sums of weights, we obtained the ranks of the attested words. We found that in 98% of all cases these words are among top 15 paths. Importantly, the ranks and frequencies are perfectly negatively correlated ($r = -0.99$, $p < 0.001$), suggesting a power-law distribution.

To test hypothesis (2), we randomly selected several possible English words from the network. The participants were asked to rate the acceptability of a given word on a scale of 1 ('unlikely') to 5 ('likely'). For each possible word, we obtained its median rating and task completion time, the final measure was calculated as a ratio of the two. The correlation coefficient ρ (rating/time, path weight) was found to be 0.81, $p < 0.001$.

Generalizing across these findings, we argue that complex words are best analyzed in a network model of morphological constructions that is shaped by language use.

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Putting semantics back on the map: enriching grammatical alternation research with distributional semantics

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Keywords: variation, synonymy, isomorphism, distributional semantics

This study focusses on the ditransitive (1a) and prepositional (1b) dative variants as semantically/functionally broadly interchangeable syntactic variants in English (see Bresnan et al. 2007).

(1) a. [The child]$_{subject}$ [gave]$_{verb}$ [her mother]$_{recipient}$ [a flower]$_{theme}$
b. [The child]$_{subject}$ [gave]$_{verb}$ [a flower]$_{theme}$ [to her mother]$_{recipient}$

This alternation is extremely well researched. However, insufficient attention has been paid to how lexical-semantic properties of the embedding linguistic context influence linguistic choice-making. In most cases, the reason is rather practical: manually annotating for top-down semantic properties (such as constituent animacy, typically analysed as a predictor in dative alternation research) is labor-intensive and time-consuming. Besides, annotation for these top-down properties is limited in the extent to which it can represent lexical-semantic richness and variation. Thus, the bulk of the literature on grammatical alternations relies on traditional, top-down formal predictors such as pronominality, or constituent length. Our aim is thus to determine the importance of semantic properties of the lexical context for predicting variant choice. Whereas – in line with the variationist methodology – we assume broad functional equivalence between the dative variants themselves, we are interested in the extent to which semantics plays an indirect role via the lexical material in the constituent slots. Ultimately, therefore, we address the extent to which two foundational principles in Cognitive Linguistics, the Principle of Isomorphism (Haiman 1980) and the Principle of No Synonymy (Goldberg 1995), can be reconciled with the rich variationist literature on the existence, ubiquity, and systematicity of grammatical variation between alternate ways of saying the same thing (Labov 1972).
On the technical plane, we experiment with a fully automatic, bottom-up method to model constituent semantics, which involves creating semantic predictors using distributional models of meaning (Lenci 2018). We specifically assess the semantics of the heads of the noun phrases taking the role of theme and recipient (e.g., flower and mother in (1)) via type-level semantic vector space modelling. The models were trained on the spoken COCA (Davies 2019, ~127 million words). Based on the resulting distance matrices, we automatically clustered theme and recipient heads separately, and obtained groupings of semantically-related types. Recipient heads clustered into rather coherent groupings related to family roles, job titles, economics, and law terminology, as well as anaphoric pronouns. Conversely, theme heads yield a wider range of semantic groupings, including words related to the labour market and household items. We then used these clusters as categorical predictors in mixed-effects binary logistic regression and conditional random forest models.
The statistical analysis is based on N = 1,170 dative observations with the dative verb give drawn from the dataset used in Bresnan et al. (2007), which in turn is derived from the Switchboard corpus of US American English (Godfrey and Holliman 1993).
In an effort to combine the top-down grammatical-oriented tradition of analysis with bottom-up lexical-semantic data, we then fitted a number of regression models with traditional formal predictors and vector-space-modelling-derived predictors. Analysis suggests that while bottom-up semantic clusters have significant predictive power, they are outperformed by traditional predictors, such as constituent weight.

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The productivity of constructions: beyond type frequency

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Keywords: productivity, type frequency, usage-based model, constructions, schematization, artificial language learning

When do speakers use constructions in creative ways? Studies on this topic typically designate type frequency, i.e., the number of different items attested in a construction, as the driving factor of syntactic productivity (e.g., Bybee & Thompson 1997). There is intuitive appeal to his idea: speakers should be more confident that a construction can be extended to new items if they have witnessed it with many items than if they have seen it used with only a few. A less common but equally sound account instead posits *variability* as the critical factor, i.e., the diversity (especially semantic) of the items witnessed in a construction. On this view, type frequency is a mere proxy for variability. Since type frequency and variability are typically correlated in natural data (more diversity requires more types, and typically more types implies greater diversity), the two factors have proven difficult to tease apart.

In this study, we attempt to separately test the role of type frequency and variability on syntactic productivity, using an artificial language learning experiment (e.g., Perek & Goldberg 2015, 2017), which allows us more control over the input provided to language users. Over two sessions, participants are exposed to two nonce constructions, "Verb Agent Patient-po" (e.g. *Mooped the cat the monkey-po*) and "Verb Patient-po Agent" (e.g. *Glimmed the rabbit-po the wolf*), through video clips paired with sentence descriptions. Each construction is attested with two different sets of nonce verbs with transitive meanings. In one condition, one construction has higher type frequency than the other, but both have low variability (i.e., each is attested with highly similar variants of the same verb meaning). In another condition, both constructions are matched in type frequency but one of them has higher variability than the other (i.e., it is attested with a more diverse range of verb meanings). After exposure in one or the other condition, participants are asked to produce new sentences in the artificial language with either a verb attested in the input, a new verb similar in meaning to those in the distributions of the constructions, or a new verb that is semantically distinct from witnessed verbs.

Participants successfully learn the distribution of each construction in both conditions, in that they use attested and similar verbs in the relevant construction. Critically, they treat the higher variability *or* the higher type frequency construction as more productive; i.e., participants strongly prefer this construction over the low variability or low type frequency construction when the verb has a novel meaning. In other words, we find independent effects of type frequency *and* semantic variability on syntactic productivity, when the other factor is held constant. While the effect of type frequency replicates earlier studies, the fact that higher variability alone can drive productivity independently of type frequency in an experimental setting is a novel finding. We interpret our results in a schema-based model of grammatical generalisations, in which schematisation can take more than one route.

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Back to cognition: the dynamics of constructions and grammar in individuals

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Keywords: construction grammar, idiolects, syntactic change, lifespan change, conventionalization, Early Modern English

For some decades now Construction Grammar has been a major theoretical model of grammar (e.g., Hoffmann & Trousdale 2013). One of its primary aims was to bring grammatical theory closer to actual usage. Yet, despite this usage-based letter of credence, quantitative analysis of attested usage at the individual level is still heavily underrepresented. In this talk I discuss how extensive analysis of individual-level usage of a variety of syntactic constructions across the lifespan can contributed to the theory of Construction Grammar. Data come from a 90 million word corpus consisting of usage from 50 prolific individuals from the Early Modern English period (the EMMA-corpus; Author et al. 2019).

Grammar is often implicitly seen as two-faced. At the community level it exists in the form of shared conventions. At the individual level it may be idiosyncratic, showing in grammatical behaviour that deviates from conventionalized forms. Consistent with the idea that grammar only exists in people's minds, I argue that these two faces are in reality one. It is precisely the combination of norm and deviation that constitutes the grammar network: a balance between individual cognitive processing and social alignment. As far as the cognitive processing goes, I adhere to the connectionist view that our knowledge is built as an associative network. Crucially, this network is larger than what construction grammar typically encompasses, also including mere semantic and mere formal associations (cf. also Diessel 2019). However, many of these associations are not salient enough to become 'active points of grammatical access', and this is also visible in the kinds of patterns that are treated as normative. Similar to what is found by Dąbrowska (2012, 2020), it appears that some individuals' patterns are more likely to be picked up in the community and become conventionalized than others. This happens for social reasons (as amply shown in Labovian sociolinguistics), but can also arguably be cognitively motivated. Constructions , therefore, are to some extent a filter on our cognitive processing. Still, these filters may change due to the underlying associations.

To make this concrete, I will model the interaction between this individual behaviour and longer-term community trends. For each of the constructions under investigation (clefts, copulas, progressives, complementation patterns) I discuss the evidence that (i) it is typically individuals who show higher degrees of idiosyncratic behaviour whose usage forecasts to a larger extent developments of subsequent generations; (ii) individuals who are ahead of their time tend to lose some of their influencer status. It is somewhat unclear whether this is due to retrograde change (going back to a more conservative state of the language later in life; cf. Sankoff & Wagner 2006) or, instead, to a higher degree of 'crystallization' of grammar, i.e. an increase in categorical thinking. I will explore how the second possibility potentially helps explain how a limited number of individuals has an above-average impact and a stabilizing effect on syntactic change similar to what Dabrowska observed synchronically.

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Ready-made chunks or schematic generalizations? Using agent-based simulation and corpora to discover how constructions are processed

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Keywords: agent-based simulation, corpus, language processing, ready-mades, chunking

Cognitive linguists generally agree that language users can cognitively store ready-made multi-word phrases (Arnon and Snider 2010) and employ more schematic generalizations (Perek and Goldberg 2017). Still, the question remains when exactly they use either. This talk will present a way of tackling that question with agent-based simulation and corpora. The key is to use contamination phenomena such as constructional and lectal contamination (Pijpops and Van de Velde 2016; Pijpops 2022), which rely on ready-made phrases to induce lexical biases in language variation. Put concretely, agent-based simulations are used to show that ready-made storage is indeed crucial to create the biases, and corpus research can show when these biases are present in the real world.

As an example, I first present two agent-based simulations of lectal contamination. This is an effect whereby language users of Variety A are more likely to use a variant typical of Variety B when using words that are more often used in Variety B. For example, Belgians are more likely to produce the 'Netherlandic' partitive genitive variant with *-s* ending (e.g. *iets bijzonders* 'something interesting-s', *iets interessants* 'something interesting-s') in phrases containing words that are more often used by people from the Netherlands, such as *bijzonder* 'special' or *boeiend* 'fascinating'. The simulations show that this effect indeed emerges if the simulated agents employ ready-made language chunks, but does not emerge when schematic constructions are used.

Next, we attempt to observe this effect in the real world through two corpus studies. The first looks at the Dutch partitive genitive introduced above, while the second investigates the variation between the determiners *zulke* 'such' and ***zo'n*** 'such', as in *zulke mensen* vs. ***zo'n mensen*** (both 'such people'). These case studies are alike in that they both present lectally stratified variation in Dutch NP's: the partitive genitive variant with *-s* and the determiner *zulke* 'such' are more popular in the Netherlands, while the partitive genitive without *-s* and the determiner ***zo'n*** 'such' are more common in Belgium. They are crucially different, however, in that ready-made chunks are likely employed when processing the partitive genitive. There are three reasons for this: (i) the variant is a bound morpheme; (ii) the partitive genitive appears with a comparatively limited amount of highly frequent phrases, although it is a productive construction; and (iii) it has an internal structure that is highly atypical for Dutch grammar, viz. an adjectival phrase postmodifying a pronoun. By contrast, NP's with *zulke* and ***zo'n*** are more likely candidates to be processed through schematic generalizations, because (i) the variant is a unbound determiner; (ii) its phrases seem lexically much more diverse; and (iii) its phrases adhere to the typical structure of Dutch NP's, with determiners followed by adjectives followed by nouns. As a result, it may be expected that the effect of lectal contamination does emerge with the partitive genitive, while it does not emerge with the *zulke-**zo'n*** variation. The results show that the expected lexical biases do indeed appear with the partitive genitive, while they cannot be observed for the *zulke-**zo'n*** variation.

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Where in the network of constructions does an alternation occur? Taxonomic and horizontal links between allostructions. Evidence from Portuguese

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Keywords: Constructional Variation, Allostruction, Constructional Networks

Allostructions (Capelle 2006, Perek 2015) are alternate constructions which are posited at the relatively lower levels of schematicity. Allostructions inherit the same propositional/referential meaning from the constructeme and instantiate the form, which is partially underspecified in the constructeme. Based on the alternation between the overt and null *se* constructions in Brazilian Portuguese (BP), as in (1)-(2), and on the pied-piping and chopping relative constructions in European Portuguese (EP), as in (3)-(4), we argue that the allostructions are mainly determined by semantic factors, especially differences in *construal* (Langacker 2008), i.e. a difference based on the *absolute* vs. *energetic* construals (Soares da Silva et al. 2021) and on the cognitive accessibility of the antecedent of the relative clause.

(1) *e aí quando ela menstrua, e tá pronta pra casar, aí eles vão e se casam, né* (BP, C-Oral)
'and then when she gets her period, and is ready to marry, they get married?'
(2) *não precisa nem de festa* […] *pra gente Ø casar, Leandro.* (BP, C-Oral)
'There is no need not even for a party […] for us to marry, Leandro'
(3) *se podemos reduzir estas questões àquele triângulo de que tantas vezes falamos* (EP, C-Oral)
'if we can limit these questions to that triangle that we talked about so many times'
(4) *esta minha colega Ø que eu há bocado falei que o marido era* (EP, C-Oral)
'this colleague of mine that I talked [Ø] earlier whose husband was'

In relation to the taxonomic network we propose that the alternations are allostructions which are posited at the level of the constructeme and below. The constructional variants inherit the propositional/referential meaning from the constructeme and specify the contrasting aspects of form and meaning. For example, the overt and null *se* constructions are allostructions of the reflexive construction [NP (SE) V]$_{REFL}$, the passive construction [NP (SE) V]$_{PASS}$, etc., and chopping and piedpiping relative constructions are allostructions of the oblique relative clause [NP (REL_PRON)$_{OBL}$ V].

Besides the taxonomic relationship between the constructions, the allostructions also hold horizontal relationships within the network (Diessel 2019). Because the referential meaning at the immediate superordinate level is shared by the allostructions, the nature of the inheritance links is also implicit in the horizontal links. However, the horizontal links are also established between alternations that, although they are at the constructeme level, do not share the referential meaning of the immediate superordinate level; rather, a more underspecified meaning posited at a higher level in the taxonomy. For example, and in the case of *se* constructions, the anticausative overt *se* construction will establish links, not only with the anticausative null *se* construction, but also with all the other overt *se* constructions (e.g. reflexive overt *se* construction, passive overt *se* construction, etc.), sharing the form and an aspect of the meaning, i.e. energetic construal for all overt *se* constructions, but not the referential or propositional meaning (e.g. reflexivity, passivization, etc.). Similarly, the chopping and pied-piping alternation in relation to the Indirect Object construction will not only establish links with one another, but the Indirect Object pied-piping construction will establish links with, for example, the pied-piping alternate of the Oblique relative construction. These types of links, therefore, establish different degrees of similarity between the alternative constructions, as suggested by Ungerer (forthcoming).

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Competing grammatical constructions: questioning No Synonymy

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Keywords: variation, dysfluencies, grammar, No Synonymy

The principle of No Synonymy, foundational in CxG, conjectures that "[i]f two constructions are syntactically distinct, they must be semantically or pragmatically distinct" (Goldberg 1995: 67; see also Haiman 1980). If two constructions happen to be synonymous – consider e.g. the alternation, in the grammar of English, between *Tom picked up the book* versus *Tom picked the book up* – then this synonymy is often thought to be exceptional, and/or short-lived diachronically, and/or generally suboptimal for language users. Exceptionality is debatable, given the sizable literature on the existence, ubiquity, and systematicity of grammatical variation; it is also demonstrably not the case that grammatical alternations are necessarily short-lived (De Smet et al. 2018). But what about suboptimality?

It is of course at first glance not implausible that grammatical variation should be suboptimal. This is because grammatical variation (as opposed to e.g., lexical variation) is typically conditioned probabilistically by any number of contextual constraints. Even before language users can make a choice as a function of the naturalness of a grammatical variant in a specific linguistic context, they need to check that linguistic context for the various constraints that regulate the variation at hand. It follows that this extra cognitive work must increase cognitive load. Or does it?

Conveniently, corpora do provide us with a way to measure suboptimality along these lines. The idea is that if No Synonymy à la Goldberg (1995: 67) is a design feature of human languages, then in usage data variation contexts should attract production difficulties. Against this backdrop, we report on the extension of a study (Gardner et al. 2021) that explores the link between production difficulty/suboptimality and grammatical variability using a corpus-based research design. Specifically, we investigate the well-known Switchboard Corpus of American English (542 speakers, 240 hours of recording), which covers telephone conversations. On a turn-by-turn basis, our analysis checks if the presence of variable contexts correlates with two metrics of production difficulty, namely filled pauses (*um* and *uh*) and unfilled pauses (speech planning time). We cover 20 different grammatical alternations in the grammar of English, which create a total of N = 57,660 choice contexts in the corpus materials. Consider the conversational turn in (1):

(1) Well, um, um, um, I think that uh once we get the house refinanced, we're gonna probably try to take our free tickets and either go to Cancun or do the little uh trip to Ca- Southern California and then on up to (592ms) Utah (F/SM/born 1961)

(1) exemplifies a turn that features 5 filled pauses, 1 unfilled pause lasting 592ms, and a total of 3 grammatical variation contexts (*I think that once* vs. *I think ___ once*; *we're gonna* vs. *we will*; *try to take* vs *try taking*). Do turns that contain more choice contexts also tend to feature more dysfluencies? Multivariate modeling (regression and conditional random forests) including various controls shows that choice contexts do not actually correlate with measurable production difficulties. These results challenge the view that grammatical variability is somehow suboptimal for speakers.

To conclude, we knew before that grammatical variation is neither exceptional nor short-lived diachronically. We now also know that grammatical variation is not in any measurable way suboptimal in language production. We will argue that it is therefore time to ask if dogmas such as the principle of No Synonymy belong in the Usage-Based Model.

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What is a "taxonomic network"? On the relationship between hierarchies and networks

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Keywords: taxonomic networks, constructicon, network science, hierarchy, abstraction

In cognitive-linguistic approaches such as Construction Grammar, Cognitive Grammar and Word Grammar, speakers' linguistic knowledge is modelled as a taxonomically structured network (Diessel 2019; Hudson 2007; Langacker 1987). In this network, abstract constructions and their more specific subtypes are connected via hierarchical relations known as inheritance links (Goldberg 1995). This model raises important theoretical questions about the relationship between hierarchies and networks: are hierarchies a type of network, or are the two systems distinct forms of knowledge representation? How do different network architectures represent constructional generalisations? In our talk, we address these questions from a theoretical perspective, also drawing on insights from formal network science (e.g., Barabási 2016).

We distinguish between two different ways of encoding hierarchical structure in networks: explicitly hierarchical networks and implicitly hierarchical networks. In explicitly hierarchical networks, the nodes represent categories at varying levels of abstraction. Using a simple, non-linguistic example (see Fig. 1a), an individual's network could relate several previously witnessed instances of dogs (dog_1, dog_2, dog_3) to a superordinate DOG node, which in turn is connected to a MAMMAL node. In implicitly hierarchical networks, on the other hand, only specific instances, or "exemplars", constitute nodes, while all higher-level categories are implicit in the linking patterns among these nodes. As shown in Fig. 1b, the network would thus only contain the dog exemplars as nodes, while the concept of DOG is implicit in the (strong) similarity links between these exemplars, and MAMMAL is implicit in the (weaker) links among the dog exemplars and all other exemplars that fall into the category (e.g., cat exemplars). Explicitly hierarchical networks tend to contain more nodes and fewer links, while implicitly hierarchical networks contain fewer nodes but more links, thus relating to the previous distinction between node-centred and connection-centred approaches (e.g., Hilpert & Diessel 2017).

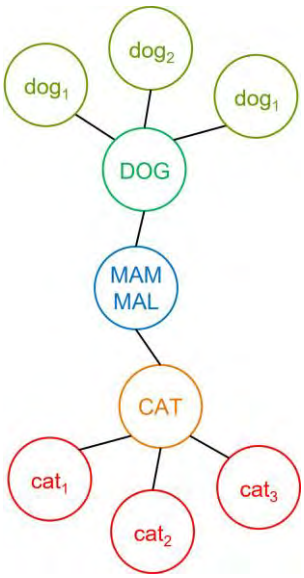

Fig. 1a: Explicitly hierarchical network.

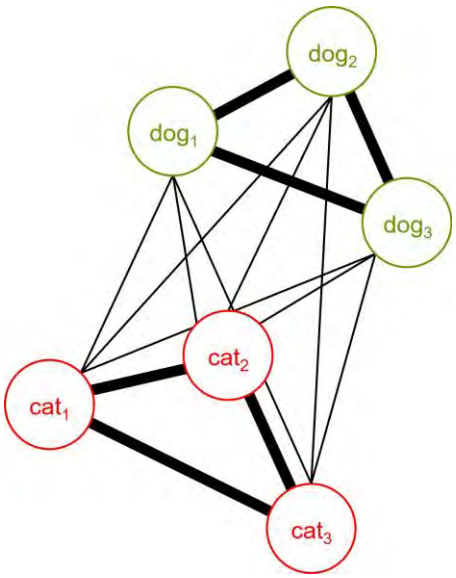

Fig. 1b: Implicitly hierarchical network.

The choice of network type has important consequences for modelling constructional networks. In particular, the networks may express different views about the role of abstraction in language. Explicitly hierarchical networks are often used to argue that speakers store generalisations, such as the double-object construction, as independent parts of their linguistic knowledge. The category nodes in the network are thus interpreted as cognitively real(istic) units. Implicitly hierarchical networks, in contrast, align more naturally with the view that speakers only store exemplars and then analogise across them on the fly (Ambridge 2020). As a result, constructions may merely be heuristic, (meta-)linguistic devices

to describe generalisations that emerge from links between exemplars. Another related question is how much redundancy there is in the network: in explicitly hierarchical networks, the category nodes duplicate information that is also inherent in their subtypes. Implicitly hierarchical networks, on the other hand, do not entail such redundant storage because information is only encoded once at the lowest-possible level.

In sum, we argue that both explicitly and implicitly hierarchical networks can be useful for linguistic analyses, but that their varying interpretations have important theoretical ramifications.

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Establishing constructionhood(s): The role of multimodal context in identifying constructions

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Keywords: construction, multimodality, social media discourse, Polish, participles

Cognitive Linguistics views grammar as monolithic in nature (Langacker 1987). Specifically, no categorical distinctions between modules within grammatical structure are postulated (e.g. syntactic vs. lexical), nor any rigid boundaries between language and other semiotic systems. A consequence of these widely held assumptions is that constructions are often multimodal. Nevertheless, it is not obvious how to adequately address the multimodal or situational cues in construction grammar (cf., e.g. Ziem 2017). This study aims to quantitatively explore the role of the multimodal context for selected grammatical constructions. To achieve that, I follow a profile-based approach (cf. Geeraerts et al. 1994; Divjak & Gries 2006; Glynn 2009) to build a qualitative and quantitative model of micro-constructional variation within a set of Polish passive participles as used in social media discourse.

The study looks at a group of 'benefactive' uses of *-ne/-te* passive participles, found in spoken and informal registers of Polish – e.g. *pojedzone* 'eaten (a bit)', *pobiegane* 'run (a bit)', *będzie grane* 'will be gamed'. They are often used in humorous expressions of 'satisfaction of time well (productively, pleasantly etc.) spent' and often display a high degree of syntactic independence:

(1) ~Twitter, id 1561274617267904***

Pobiegane	*i*	*fajnie*	*jest*	*😊Endorfinki*	*buzują😊*
run_a_bit.PASS.N.NOM=ACC.SG	CONJ	nice	be.PRES.3SG	endorphin(DIM).NOM.PL	buzz(IPFV).NPST.3PL

'There was some running ['it was run'] and it feels nice :) Endorphins are buzzing :)'

[Image: a photo of a runner on a forest path; the runner's reflection is visible in a puddle on the path]

These uses consist of a single, invariant form of the verb, and often suppress the arguments. However, when analysed in a multimodal discursive environment, the semantic scenarios conveyed by them can be similarly complex as the scenarios expressed with finite forms. I argue that such multimodal patterns of use can be considered in terms of constructions.

Social media discourse provides users with more modalities than traditional, non-interactive written registers, while offering researchers a higher degree of control in comparison to spontaneous in-person conversations. For this reason, this study employs a dedicated corpus of Twitter data comprised of over 600 000 tweets including target passive participle forms. From that corpus, I will draw 3 samples of 700 tweets, each sample comprising uses of a different target form – *pobiegane* 'run', *pojedzone* 'eaten', *pogadane* 'chatted' (all three representing *po*-prefixed, delimitative verbs, expressing duration for 'some time', 'a bit'). Each sample will be subject to multifactorial coding, including collocational properties on the one hand (focusing on discourse particles, prepositional phrase types, optional auxiliaries, emoji and presence/type of references) and, on the other, semantic annotation of the visual material tweeted (focusing on the presence of elements of RUNNING, EATING and COMMUNICATION scripts in the visual content – esp. Agents, Locations, Results). The obtained profiles will be analysed using exploratory quantitative techniques aimed at delineating types of use, in particular, Hierarchical Cluster Analysis performed on the output of Multiple Correspondence Analysis (cf., e.g. Glynn & Robinson 2014). The results will make it possible to assess the role of the visual content-related variables and review the potential of the delineated types to be recognised as multimodal low-level constructional patterns.

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Revisiting constructional gradience: V-PP patterns in the history of English

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Keywords: gradience, history of English, verb-attached prepositions, adjuncts, complements

This paper aims to contribute to debates on the nature of 'constructions' in usage-based construction grammar approaches – more specifically, it discusses the question of constructional gradience and/or fuzziness from such a perspective. Particular focus is given to the implications of gradient vs discrete definitions of constructions for diachronic investigations and the notion of gradualness, explored by means of a quantitative study of verb-preposition patterns in the history of English.

In usage-based, cognitive constructionist approaches, one basic assumption is that linguistic categorisation is inherently fuzzy and gradient rather than always adhering to clear-cut distinctions (Croft 2001, 2007; Denison 2001, 2006; Aarts 2004; Aarts et al. 2004; Rosenbach 2006; Keizer 2007; Bergs 2021). That is, from a usage-based perspective, grammatical indeterminacy, categorical fuzziness, and vagueness are considered pervasive in language. Such gradience then also plays a role in language change, where it is often discussed as both a prerequisite and a consequence of change: fuzziness makes change possible by providing a zone of flexibility and potential development (Desagulier 2008), but at the same time, synchronic gradience is typically seen as "the product of gradual diachronic change" (Traugott & Trousdale 2010b: 21).

The present paper now zooms in on one particular open question regarding constructional gradience and gradualness, viz. that of discreteness – on the one hand, we may assume that categories or constructions can simply be fuzzy without distinguishable boundaries, which (to some extent) also implies that gradual change can be continuous in the strictest sense. On the other hand, many constructionist discussions seem to rely on a definition of constructions as ultimately discrete, but differing in degrees of entrenchment and schematicity. Here, categories or constructions may give the appearance of fuzziness, but this gradient nature can be captured by more fine-grained, discrete representations on lower, more substantive levels, or by multiple inheritance (cf. e.g. Desagulier 2008). Gradual change here then is the accumulation of step-wise, discrete micro-changes rather than truly continuous (e.g. Traugott & Trousdale 2010a, 2010b).

The case study drawn on to address these questions is English verb-attached PPs and their history: As is well known, such PP-patterns are typically differentiated into adjuncts (1) versus complements (2), but this binary classification has often been challenged, with e.g. Hoffmann (2007) instead proposing a cline modelled as more fine-grained network of constructions (cf. also Bergs 2021). Furthermore, little larger-scale empirical investigation of the diachronic development of verb-preposition combinations and the adjunct-complement distinction is available to date.

(1) They bought some cake **in Rome**.
(2) They put the cake **on the table**.

Using a sample from a broader dataset of all verbs in sister-relation to PPs retrieved from the Penn-Helsinki Parsed Corpora of Historical English (Middle English, Early Modern English, and Late Modern English; Kroch et al. 2000, 2004, 2016), I revisit these issues, and argue that the distinction between adjunct-PPs and complement-PPs is best represented as a 'gradient' range of discrete constructions in a multi-level network rather than as two (fuzzy) constructions. In terms of diachronic development, I show that this network has remained remarkably stable over time, with only slight, gradual changes being observed.

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On the potential extension of the frame concept to the text level: a case study based on instructional texts

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Keywords: Frame semantics, text linguistics, instructional texts

[Context and Research Questions]

Recipes, instruction manuals or package inserts have in common that they give instructions to their readers to enable them to achieve a particular goal (Heurley, Granier 2006: 46). So, beyond the mere transfer of knowledge, instructional texts have a practical purpose, which is fulfilled if the tasks are carried out correctly (Nickl 2018: 324). Such texts can be assigned to the text class of instructional texts, which includes various text types (Adam 2001: 12ff). Considering that frames are meant to be "a uniform representation for word meanings, sentence meaning, *text interpretations,* and *world models* [emphasis added]" (Fillmore 1976: 28), the reader needs to activate the frames not only at the word and sentence level but also at the textual level, in order to perform the instructions. Otherwise, by not being able to link the frames evoked by a word to the whole system on the macro-level, the instructive aspect would be reduced to explanation. Therefore, we argue that the frame concept as described various times by Fillmore is also applicable to the textual level. Consequently, the first research question is how to model this textual frame. As frames build a network structure and are connected to each other (Fillmore 2006: 373), the textual frame is not isolated either. The nature of the interaction between frame(s) at the macro-level with those at micro and meso-level is the core of the second research question. Since the argumentative structures connecting propositions can be represented by frames (Varga 2019: 94), we assume that transphrastic relations in general can be modeled as frames. So the meso-level comprises these relations and the associated logical frames.

[Data]

The analysis is based on a comparable corpus of instructional texts in standard French and German. The corpus contains different text types that can be subsumed under the tag "instructional text". The sub-corpora are equally balanced to each other with approximately 100,000 words in total.

[Methodology]

The analysis follows a bottom-up approach, so the corpora are annotated on three different textual levels. Firstly, at the micro-level the verbs and their respective frame elements are annotated. Since frames are interrelated through relational structures, e.g. temporal, causal, (Barsalou 1992: 35f) the second step of the analysis regards the meso-level. These relations can be implicit, thus, existing as frame elements, but not instantiated. The third step of the analysis regards the macro-level, integrating the frame-semantic elements on the lower levels into the overall textual frame whose existence is the core of our demonstration.

Fillmore states that "the frame conception is a useful tool in […] text semantics" (1985: 223), but this approach rests unfinished. Although, different words can "belong to a single (high-level) frame" and the interrelations are described beyond the sentence level as they establish coherence, there is no link to the textual level (Fillmore/Baker 2001: 4). Extending the concept - as Czulo, Ziem & Torrent (2020) propose, for instance at pragmatic level - offers new perspectives on the modeling of textual complexity, text types and their patterns.

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Alignment and annotation issues with English and German image captions

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Keywords: multimodality, frame semantics, image annotation, translation

Current work in the field of Multimodal Machine Translation (Elliott et al. 2016; Lan et al. 2017; Barrault et al. 2018; Nakayama et al. 2020; Torrent et al. 2022) has been focusing on expanding the popular benchmark dataset for sentence-based image description Flickr30k for multiple languages (Young et al. 2014). The dataset comprises image-caption pairs with multiple crowd-sourced descriptions per image. Preliminary experiments (Viridiano et al. 2022) applied the FrameNet annotation methodology to assess frame semantic similarity across languages and across communicative modes to extensions of the Flickr30K dataset – specifically the Multi30k dataset (Elliott et al. 2016) and the Flickr 30K Entities dataset (Plummer et al. 2015). The results make the case for the adoption of annotation practices that recognize and represent the inherently perspectivized nature of multimodal communication.

In this contribution, we will report on issues encountered during a two-step alignment and annotation task of English image captions and their German translations during a project course with students at Leipzig University. These issues concern the alignment of English noun phrases with correspondent phrases in the German translation, and the subsequent assignment of frames and frame elements for image entities correlated via bounding boxes with noun phrases in both English and German captions.

English noun phrases and their corresponding bounding boxes are pre-annotated in Flickr 30k Entities and could not be changed by students, so as to ensure mapability onto the original dataset. The current setup of the data set is guided by the English original captions, with bounding boxes only created if an entity is referred to by a noun phrase. In the alignment, the shortcoming of this shows: For instance, there are multiple cases in which nouns in English are translated by a verb in German, such as in example (a) (see below), which, by the current logic in the dataset, would leave the bounding box linked to *a gathering* devoid of a corresponding linguistic element in German. On the other hand, in some cases, adjectives embedded in noun phrases in English are translated as nouns in German, as in example (b), which by the current logic would require an additional bounding box for the *Schnauzer* ‘mustache’.

As outlined in frame semantic translation analysis (Czulo 2017; Torrent et al. 2018) and frame semantic multimodal annotation (Belcavello et al. 2020), formal divergences between originals and translations do not necessarily lead to a difference in semantics, or to one that cannot be explained by means of frame relations, resulting in equally plausible descriptions of images. We will present an initial classification of formal divergences and their impact within the current annotation setting. On top of that, we will make another case for the multi-perspectivity of image captioning and how frame semantic analysis can help us uncover the constraint space for potential interpretations.

Examples

(a) EN: Indians having a gathering with coats and food and drinks.
DE: Indios in Umhängen versammeln sich zum Essen und Trinken.
lit. ‚Indians in coats are gathering for food and drink‘

(b) EN: A mustached man in a white shirt
DE: Ein Mann mit Schnauzer und weißem Hemd
lit. ‚A man with mustache and white shirt‘

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Extracting Verb Sense Hierarchies from FrameNet

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Keywords: FrameNet, frame, word hierarchy, verb hierarchy

This study extracts verb hierarchies using the frame-to-frame relation of ”inheritance” in FrameNet (FN) and Japanese Framenet (JFN). Hierarchical relationships constitute invaluable information for NLP tasks (Yahya et al., 2013; Hoffart et al., 2014). In particular, verb hierarchies are useful for QA tasks. However, currently not enough data exists for incorporating knowledge of verb hierarchies into intelligent systems. This study extracts verb hierarchy relationships from FN. When two FrameNet frames are linked by an “inheritance” link, we hypothesize that lexical units (LUs) (pairings of lemmas and frames) that evoke those frames exhibit an inheritance relationship too. In other words, a LU that evokes the parent frame is more abstract in meaning than a LU that evokes the daughter frame. In this study we visualized frame hierarchies and created a dataset by extracting English and Japanese verbs from the FN and JFN database respectively. Furthermore, we propose a benchmark task involving verb hierarchical embeddings using the created dataset. The result suggests that the task is of sufficient quantity and quality to train and measure verb embeddings.

For creating word hierarchical representations, two steps are required: getting the hierarchy data and representing words within a vector space. Whereas many datasets/tasks exist for noun hierarchies, only a few such tasks for verb hierarchies are available. As for noun hierarchies, one of the major noun datasets is WordNet (Fellbaum, 1998; Miller, 1995) and a WordNet link prediction task (Ganea et al., 2018) is widely used for measuring noun hierarchy representations.

We used FrameNet to create a verb hierarchy dataset. We hypothesized that when two frames are linked by an inheritance frame-to-frame relation, a LU that evokes the parent frame and another LU that evokes the daughter frame also exhibit an inheritance relation. We call such LUs ”hierarchical LUs.” For example, since `Commerce_buy` frame inherits from `Getting` frame in FN, we assumed that acquire and get are more abstract than buy and purchase. We first extracted hierarchical LUs from frames (See Table 1). We then created a FrameNet-based verb hierarchy prediction task as a verb version of Ganea’s task. This is a binary classification task to decide whether two verb LUs have a hierarchical relationship. We trained Poincaré embeddings (Nickel & Kiela, 2017) in this task and they performed over 70% F1 score. The results show that our task is of sufficiently high quality and quantity for training and measuring verb hierarchical embeddings.

In summary, we extracted verb hierarchies using Inheritance frame-to-frame relations in English FN and JFN and proposed a benchmark task for training and measuring verb hierarchical embeddings. Our verb embeddings represented hierarchies well. The results indicate that our dataset created from FN have extractable structure and are sufficiently large for use in machine learning. Most existing applications do not make use of verb hierarchical information due to lack of resources. Our research is applicable to FrameNets in other languages, and has a potential to stimulate use of verb knowledge in NLP, such as chatbots that can respond intelligently to questions.

Tab. 1: Lexical units (LUs) of frames with inheritance relations, extracted from English/Japanese FrameNet

lang	LU of child frame	LU of parent frame	child frame	parent frame
en	*walk*	*go*	`Self_motion`	`Motion`
en	*yell*	*say*	`Communication_noise`	`Communication`
en	*wash*	*do*	`Grooming`	`Intentionally_affect`
en	*jump*	*do*	`Attack`	`Intentionally_affect`
en	*eat*	*take*	`Ingestion`	`Ingest_substance`
ja	売る (*sell*)	与える (*give*)	`Commerce_sell`	`Giving`
ja	教える (*tell*)	言う (*say*)	`Telling`	`Statement`
ja	飛ぶ (*jump*)	行う (*do*)	`Self_motion`	`Motion`
ja	作り上げる (*make*)	作る (*make*)	`Intentionally_create`	`Creating`
ja	走り去る (*run away*)	動く (*move*)	`Self_motion`	`Motion`

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Language-internal and cross-linguistic considerations in constructiCon organization – the example of motion constructions in the Swedish ConstructiCon

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Keywords: Comparative Concepts, ConstructiCon, Construction alignment, Cross-linguistic alignment, FrameNet, Swedish

ConstructiCons, in the sense relevant here, are inventories of construction descriptions (for an overview, see Borin & Lyngfelt, to appear). While they are mainly developed as language-specific resources, there are also ongoing efforts to align constructiCons for different languages. This paper is concerned with the somewhat conflicting considerations that (may) arise when a constructiCon is designed for both language-internal and cross-linguistic purposes, based on experiences from the Swedish ConstructiCon.

In order to avoid language bias, cross-linguistic alignment of constructiCons requires some kind of language-neutral base of comparison. This, in turn, means that construction entries have to be associated with two kinds of overall structures:

- on the one hand, the constructiCon resource they belong to, which should be organized according to the language it is designed for,
- on the other hand, the structure of whatever is used as a base of comparison, which should be suited for cross-linguistic application.

The model employed for construction alignment is MoCCA (Model of Comparative Concepts for ConstructiCon Alignment; MoCCA, 2023; see also Lyngfelt et al., 2022, to appear; Laviola et al., to appear. MoCCA combines the set of typology-based comparative concepts in Croft (2022) with the semantic frames of FrameNet 1.7[1] (Ruppenhoffer et al., 2016), connecting constructions within and across languages via the comparative concepts, including frames, they match.

Ideally, a constructiCon may be organized to fit both language-internal and cross-linguistic conditions to the extent that they are analogous. When they are not, language-internal concerns take precedence, and cross-linguistic application is secondary. We will address this optimization problem from the viewpoint of the Swedish ConstructiCon[2] (cf. Lyngfelt et al., 2018, to appear), exemplified by the treatment of Swedish motion constructions.

Swedish is a so-called satellite language (cf. Olofsson, 2018; Slobin, 1996; Talmy, 2000), typically expressing manner of motion by the verb and path of motion by adverbial satellites, as illustrated in (1). Such properties are straight-forwardly accounted for in both MoCCA and Swedish grammars. A diverging feature, on the other hand, is the fake reflexive in (1). From a Swedish viewpoint it is clearly a reflexive pronoun, whereas it does not qualify as a reflexive in MoCCA due to its lack of reflexive semantics. This and other points of divergence between Swedish and MoCCA, and their treatment in the Swedish ConstructiCon, will be the main focus of the talk.

(1) Joel skyndade sig iväg till bussen.
Joel hurry.PAST REFL3 off to bus.DEF
'Joel hurried off to the bus.'

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Co-Pilots for Frame Semanticists

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Keywords: Frame Semantics, FrameNet, AI, Lutma, Frame Creation, Large Language Model

A Large Language Model (LLM) is a text-generation system trained on vast amounts of text. To generate text, the model must have developed a way to deal implicitly with the structures of languages so that it mimics the conceptual patterns underlying languages, at least in the eyes of a cooperative human comprehender. The model succeeds only to the extent that the human user judges its output to be appropriate. In this talk, we do not focus on whether LLMs have any understanding of language or not. Rather, we discuss whether the LLM can be used as a tool for the researcher to do linguistics. Therefore, this talk reframes the discussion about LLMs, from what they can do with language to what they can do for linguists. Namely, we aim to answer the following questions: Can LLMs be prompted to help the linguist analyze cognition and language? Can LLMs leverage whichever representations they build for correlations between linguistic items so as to express conceptual and linguistic structures?

Creating an entry for FrameNet is extraordinarily laborious (Fillmore et al., 2003). Although more than a thousand conceptual frames—and the lexical units evoking them—have been characterized in FrameNet, many more still need to be built. To facilitate this process, tools such as Lutma—"a collaborative, semi-constrained, tutorial-based tool for contributing frames and lexical units to the Global FrameNet initiative." (Torrent et al., 2022) been built. In this context, we further specify our initial questions as follows: Can an LLM assist the researcher who is attempting to expand FrameNet? Can an LLM assist the user of existing frame creation tools?

To answer those questions, we conduct an exploratory study focusing on a particular LLM—ChatGPT, developed by OpenAI. The possibilities for ChatGPT as an eliciting interlocutor for the linguist are extensive. The conversational interface allows for continuous dialogue with the system, which can present text in a variety of formats; write code potentially useful for frame-building tools; and, when informed of its mistakes, respond repeatedly and inventively to requests to correct them.

We present routines for prompting ChatGPT to assist linguists in frame building. We also analyze the limitations of the model and some of its potential risks. Results indicate that ChatGPT can propose structures similar to frames and frame elements; propose subframes and super-frames, including inheritance structure; list lexical units evoking a newly created frame; and provide examples and analyses.

Our pilot study found that ChatGPT has serious limits and is no substitute for the trained frame semanticist. It can make mistakes in proposing (a) attribute frames that lack a core frame element that indicates the attribute that is associated with the entity; (b) entity frames whose list of lexical units is structured not by consistent lexicographic properties but rather by an ontology that derives from a check-list theory of meaning as composed of combinations of criterial properties; (c) event frames where core frame elements are missing, while other frame elements are inappropriately included in the frame even though they are a frame on their own.

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Operationalising Usage-Based Construction Grammar on a Large Scale

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Keywords: computational construction grammar, usage-based linguistics, semantic frames, PropBank

In this talk, we will (i) discuss the large-scale operationalisation of usage-based construction grammar, (ii) present a broad-coverage usage-based construction grammar operationalised in the Fluid Construction Grammar framework (Steels, 2011; van Trijp et al., 2022), and (iii) introduce a tool that makes use of this grammar to support searching through corpora from a semantic perspective.

The grammar was constructed algorithmically based on the PropBank-annotated EWT (Bies et al., 2012) and OntoNotes (Weischedel et al., 2013) corpora. In essence, it contains over a 100,000 constructions, interlinked by a categorial network consisting of over 85,000 nodes representing grammatical categories and 750,000 edges representing categorial links. The grammar can efficiently and effectively be used to map from English utterances (form) to frame-semantic-inspired representations formalised using the PropBank convention (meaning) (Palmer et al., 2005). It thereby mainly focusses on events and their participants on the semantic side and argument structure on the form side.

Apart from a general discussion about why scaling (usage-based) construction grammar is of crucial importance for the future of the field and presenting a novel methodology to automatically build large-scale usage-based construction grammars, we will also introduce a first example of a methodological tool that makes use of this methodology to support usage-based linguists in their empirical research. More specifically, the tool enables users to search for corpus observations which instantiate a particular semantic structure. For example, a user might want to search for corpus observations in which the transfer sense of the verb 'give' is expressed in combination with an agent (i.e. a giver), a theme (i.e. a thing being given) and a beneficiary (i.e. a receiver). The tool then retrieves corpus examples that instantiate this semantic structure using any morpho-syntactic realisation, e.g. 'scholars will give you a detailed analysis', 'he gives priority to diplomacy or internal affairs' or 'the Spirit gives to one person the power to do miracles'. The tool provides a user-friendly interface for defining semantic structures of interest using the PropBank rolesets. Optionally, form-related constraints can be included, in particular constraints on the order in which the semantic roles are realised, the morpho-syntactic means through which one or more of the semantic roles are expressed, or the exact strings that appear in the instantiations of the semantic roles. A beta version of the tool is available at `https://ehai.ai.vub.ac.be/ccxg-explorer/`.

In sum, this talk will make a case for scaling up (usage-based) construction grammar, present a novel methodology for algorithmically building large-scale usage-based construction grammar, and introduce a methodological tool that uses this methodology to support empirical linguistic research.

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What happens if you try to build a constructicon for a whole language?

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Keywords: Construction Grammar, Constructicography, Constructicon

Our points of departure are Fillmore's (1988: 37) claim that "[t]he grammar of a language can be seen as a repertory of constructions" and Goldberg's (2005: Chapter 8) observation that constructions are related to each other in radial category networks. To answer Fillmore's challenge to describe an entire language in terms of constructions, we have built a large-scale constructicon resource that represents a major portion of the grammar of Russian. Throughout this process we have endeavored to represent the semantic and formal relationships among constructions, following Goldberg's model. The result is the Russian Constructicon (https://constructicon.github.io/russian/), a structured inventory of over 2200 constructions and their organization into families, clusters, and networks. Constructions in this resource are supplied with extensive linguistic annotation, definitions, and corpus-based examples of use.

We present the challenges faced and decisions made in the concept and design of a (relatively) comprehensive constructicon resource. We focus on three issues: 1) choice of constructions, 2) target users, and 3) extensions to other languages and language pedagogy.

Choice of constructions

If a constructicon is to model the entirety of the grammar of a language, then it must represent constructions at varying levels, from schematic "macro-constructions", through mid-level "meso-constructions", to individual "micro-constructions" (terms introduced by Traugott 2008). Many of the most schematic constructions, such as the transitive verb construction, are already represented in reference grammars, and many micro-constructions, such as those found in lexemes containing derivational morphology, are already represented in dictionaries. While the Russian Constructicon focuses primarily on otherwise underrepresented constructions at the meso-level, it contains constructions at varying levels of schematicity. We will discuss in detail some of the difficult decisions concerning the granularity of representation and whether to join constructions in a single higher-level entry, or split them across multiple entries, or combine both strategies.

Target users

A resource that represents an entire language has many potential users: linguists, NLP professionals, language teachers, and language learners. These users have different and sometimes conflicting needs and expectations. This is particularly relevant for conventions and abbreviations. Linguists are most likely to be familiar with Leipzig Glossing Rules. NLP specialists need annotation of constructions in terms of Universal Dependencies. Language teachers and learners require more user-friendly accommodations.

Extensions to other languages and language pedagogy

The programming design is open-source and deliberately lean and simplistic to facilitate portability to other languages with minimal programming support. For language learning, we have created add-on resources, among them Construxercise! (https://constructicon.github.io/construxercise-rus/), a bank of over 150 exercises that target strategic sets of Russian constructions, and instructional videos (https://www.youtube.com/playlist?list=PLUzLnIT3QLjKheIfFsryUT1nXvxdb9b75).

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What's in the constructicon? Relating constructional forms and constructional meanings on the full range of the lexicon-grammar continuum

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Keywords: constructicography, frames, conceptual metaphors, grammatical constructions, lexical units, lexicon-grammar continuum

In the last decade several constructicon projects emerged, jointly motivated by the aim to build a digital resource for grammatical constructions, i.e., form-meaning pairings on various levels of abstraction and schematicity, specific for their respective target language (for an overview cf. Lyngfelt et al. 2018). By doing so, each project had to decide on a vast range of issues, including theoretical, methodological and technical ones. One issue relates to coverage: Which linguistic items should be addressed and integrated in the constructicon? How to relate these items? And what does it take to implement both the items and the relations among them in a user-friendly repository? Each constructicon project provides specific answers to these pressing questions, mostly also motivated by practical considerations, for instance regarding the expected workload in relation to affordability. While, for example, the Berkeley FrameNet Constructicon – the pilot project which is currently not being continued – includes a sample of about seventy constructions ranging from constructional idioms to abstract argument structure constructions, the Russian Constructicon focuses on a large-scale basis on semi-schematic constructions (cf. Janda et al. 2020). Neither covers lexical constructions, including valency constructions; however, such constructions located toward the lexicon pole of the lexicon-grammar continuum are included in the Brazilian Portuguese FrameNet (cf. Torrent et al. 2018) and in the German Constructicon (cf. www.german-constructicon.de).

This talk discusses advantages and challenges of including the full range of constructions of various schematicity, idiomaticity and syntagmatic complexity along with the semantic frames evoked by them in the German FrameNet Constructicon. The focus is on four constructicographic issues: (1) Following Goldberg's "constructions-all-the-way-down" maxim (Goldberg 2006: 18), to what extent do lexical and grammatical construction entries overlap and differ, and how can we account for this in constructicographic routines? (2) What is needed to include fixed multiword units as well as constructional idioms along with productive and highly schematic grammatic constructions in a constructicon? (3) How can conceptual metaphors – which themselves form complex meaning-bearing units– be captured both methodologically and empirically? (4) And is there a place for conceptual structures not encoded by linguistic forms, such as some image schemata, in the constructicon? The talk concludes by outlining the tripartite structure of the German FrameNet Constructicon that has been designed to address these challenges.

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Mental Spaces, Blending and Viewpoint: A session in memory of Gilles Fauconnier

Convenors:

Eve Sweetser & Barbara Dancygier

A mental-space account of embedded viewpoint for anaphoric constructions countering coreference rules

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Keywords: Anaphoric constructions, mental spaces, viewpoint

Lexical forms of anaphoric constructions in written discourse tend to pattern according to well-investigated coreference rules. For example, the higher the degree of accessibility or activation of the referent, the lighter the lexical form of anaphora (Ariel 1990, Chafe 1996). Conversely, when referents are less or hardly accessible due to changes of topic or changes in time/space/character settings, stronger recalls of old-discourse items/people occur (Clancy 1980, Van Vliet 2002). In addition, scenes or argumentative parts involving more participants may feature more specific coreferences serving disambiguation purposes (Fox 1987, Emmott 1997).

However, referent accessibility is not determined in a vacuum. Items and people may have lower or higher accessibility in the minds of readers as well as of story characters, who may themselves utter anaphoric constructions. Moreover, information about items or people is updated multiple times as discourse unfolds, and anaphoric constructions may represent an economic way to convey additional information explicitly or implicitly (Enfield 2007, Betz 2015). Previous work (Bonifazi et al. 2022) has shown that even variations in forms of proper names used anaphorically can be sensitive to discourse discontinuities within and across paragraphs.

This paper accounts for anaphoric constructions countering canonical coreference rules (often labeled in literature "over- and under-specification") in terms on embedded viewpoint spaces. The Viewpoint Space framework (Dancygier 2012; Dancygier & Sweetser 2012) combines mental spaces (small cognitive structures that are updated as discourse progresses; Fauconnier 1985) and viewpoint, taken as a conceptual category embracing the discourse participants' alignments, attitudes, and epistemic stances beside their physical position (Dancygier & Vandelanotte 2016). Viewpoint spaces interact with each other to form networks, and in texts they may range from higher-level discourse configurations such as the main story space (or "Ground Viewpoint Space" in Kwon and Kim 2021) to lower-level constructions such as local or embedded viewpoint spaces.

The paper assumes that each anaphoric construction profiles a referent against the background of a particular viewpoint (mental) space. For example, the character "Mrs Dacre", known to the reader, at some point is referred to as "the unfortunate lady": the construction invites the reader to follow the viewpoint space of a character who would call her "the unfortunate lady".

The questions guiding the analysis include a) which linguistic features of anaphoric constructions within the host paragraph prompt discontinuity in viewpoint spaces; b) how embedded viewpoint spaces relate to the hierarchy of viewpoint spaces in the story; c) which are the input viewpoint spaces if embedded viewpoint spaces are blended spaces (Bonifazi 2018).

Data come from a corpus of 6 short classical British detective stories including 3,842 anaphoric constructions with individuals as referents. Such a corpus maximizes the potential viewpoint spaces within the general expectation of smooth referential management. Each story is populated by multiple speakers (7 to 11) and multiple referents of anaphoric constructions (44 to 134, mostly individual characters). Moreover, the size (257 to 640 sentences) allows the observation of patterns concerning the use of a variety of anaphoric NPs reflecting or countering canonical coreference rules. Finally, the progress of detective stories enhances a dynamic coding of implicit updates about individuals through discoveries and potential gaps of knowledge (Tobin 2006).

In Example 1 (see below), the second occurrence of "the great Valentin" puzzles the reader, because the writer's access to Valentin's mental states and the preceding coreferential forms "he", "his", "he", and "he" establish Valentin as higher in focus than the other male character (Flambeau). In Example 2,"the criminals themselves" is uttered by Miss Marple at a moment where characters and readers have no clue about the referents, whereas Miss Marple does. In both cases, the reading of an embedded viewpoint space can explain the otherwise unnecessary (Ex. 1) or too cryptic (Ex. 2) anaphoric constructions.

*Example 1: Hence the great Valentin, when he set out to find Flambeau, was perfectly aware that his adventures would not end when he had found him. But how was he to find him? On this the great Valentin's ideas were still in process of settlement." (*The Blue Cross *by Chesterton, §§4-5).*

*Example 2: "Bloodstains dropped on the pavement from the bathing dress hanging above, and being a red bathing dress, of course, the criminals themselves did not realize it was bloodstained" (*The Bloodstained Pavement *by Christie, §59).*

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Discourse spaces, stance-stacking and viewpoint blends in Internet memes

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Keywords: fictive interaction, Internet memes, multimodality, quotation, stance, viewpoint

Quotation plays an important role in evaluating and typifying attitudes (Clark & Gerrig 1990, Dancygier 2021), and similarly, Internet memes are used as tools to express attitudes and emotions (Dancygier & Vandelanotte 2017). It is small wonder, then, that Internet memes often feature fictive quotation (Pascual 2014), speech representation, and, more generally, many forms of depiction (Clark 2016). These fictive depictions have the added advantage of frame-metonymically evoking rich contents in a limited space, making them a useful tool for use in memes. Building on the work on quotations, we discuss a subtype of mental spaces (Fauconnier 1994 [1985]) prompted by discourse configurations. We focus on several types of memes, to flesh out the role of fictive quotation in building complex blended viewpoints.

We start with *be like* memes. In its linguistic manifestations, *be like* has been widely studied as a pseudo-quotative construction in examples like *And I'm like, OMG!*, where *OMG!* profiles the stance, rather than quoting linguistic form (cf. Buchstaller 2014, D'Arcy 2017, Hsu et al. 2021). For comparison, *be like* Internet memes combine plural NP subjects and base forms of *be like* (as in, e.g., *moms be like*) with images (Fig. 1). Use of the base form of the verb is a feature influenced by African American Vernacular English (cf. Cukor-Avila 2002). *Be like* memes serve to reinforce (often negative) stereotypes about the class of referents identified in the plural subject NP by evoking discourse spaces as source domains in a similative reasoning (cf. Vandelanotte 2019).

In the main argument of the paper we focus on fictive quotations reinforced with complex images, such as whole cartoons or grid-like arrangements of multiple stances (Du Bois 2007), juxtaposed and left for the meme viewer to integrate into a coherent blended viewpoint. We discuss a range of meme types relying on fictive quotations including Anakin and Padmé memes (Fig. 2) and complex grids representing political options (Fig. 3).

Figure 2, for instance, refashions what is originally a fictive dialogue between *Star Wars* characters. Elizabeth, newly made Queen, is pretend-quoted as affirming her accession; youngish Charles expectantly asks confirmation that he is next in line; no verbal reply is given but the ageing Queen, close-up, looks unsmiling; prompting a doubtful, older Charles to echo his original question without much hope. The example's considerable compression across time underscores the fictive nature of the exchange, and embodied aspects help construe the lower viewpoints. The overall viewpoint blend allows us both to understand Charles' predicament, and take an ironic distance towards it.

Overall, we compare discourse spaces in linguistic and memetic constructions to propose an interpretation of their frame-metonymic role in representing attitudes and emotions. We argue that multimodal artifacts such as memes employ constructionally determined combinations of linguistic forms and images to profile multiple stances and arrange them into complex stance-stacking constructions (Dancygier 2012). We show how the multimodal structure of memes is exploited in constructionally supported stance configurations. These examples support our proposed view of multimodal constructions as stance-stacking constructions.

Fig. 1: 'Be like' meme.

Fig. 2: 'Anakin and Padmé' meme.

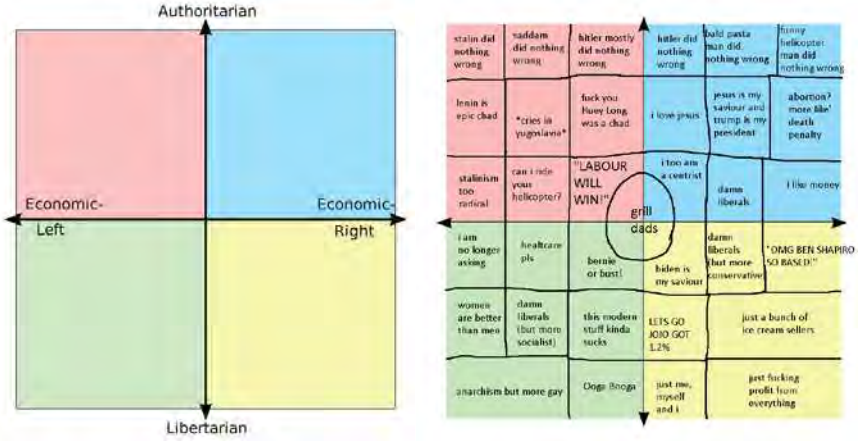

Fig. 3: Political compass chart and example of a meme based on the chart.

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Embedded mental spaces and viewpoints in embedded insubordination constructions in Japanese and English.

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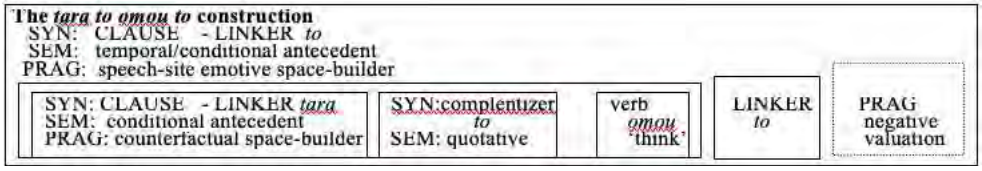
Keywords: Mental space, embedded insubordination constructions, stacks of viewpoints, conditional constructions, insubordination constructions

Mental-space building constructions are crucial viewpoint-builders. I here examine what I call 'embedded insubordination constructions' (EICs), where an antecedent-only conditional construction (without the consequent clause) is further embedded as a complement of a mental-state predicate, as in (1) and its Japanese counterpart (2).

(1) I can just imagine if it was my daughter. (Dancygier and Sweetser 2005) *Vancouver Sun* (Oct. 4, 2000)

(2) *(kore ga)* *zibun* *no* *musume* *dattara* *to* *omou* *to.*
this NOM (my-)self GEN daughter COP-Cond(if) QUOTATIVE think Cond(if/when)
Lit. As/when/if (I) think (that) if (it was) my daughter.
(Cf. I can just imagine if it was my daughter.)



I examine the properties of multiple constructions involved in EICs, and clarify the contributions of these constructional properties to building and embedding mental spaces, which communicate *stacks* of viewpoints (Dancygier 2012).

Conditionals are one of the most important mental-space builders delineated by Fauconnier (1985, 1997). The most-studied cases are bi-clausal constructions, such as the *if P (then) Q* construction in English and the *P –tara/(e)eba/ to Q* constructions in Japanese, where Q adds content to the space built by P. However, antecedent-only (or insubordination) constructions also build a mental space, conveying meanings of a specific type of conditional relation (predictive), and communicating a certain epistemic stance (mainly) via tense-aspect-modality (TAM) on the verb phrases (in English). In (1), for example, P alone, maintaining the TAM of a predictive conditional, evokes a counterfactual space with a negative stance, which in turn invokes the corresponding counterfactual consequent (see Figure 1).

An interesting property of an EIC as in (1) is that, by embedding the antecedent-only construction within a complement of the verb 'imagine', the hypothetical mental-space is further embedded in a subjective-viewpoint mental-space (see Figure 2). Here the second-layer complementation construction conveys a subjective viewpoint, which is construed in 'construction of intersubjectivity'(Verhagen 2005). The formulaic combination of *can (just) imagine* is required (***** I imagine if …).

The Japanese counterpart EIC [P-*tara* ∅ *to omou to* ∅] also involves P-only without Q, embedded within the complement of a cognitive verb (*omou* 'think'), which communicates the same two stacks of viewpoints via two layered mental spaces as in English (1). What is unique to the Japanese EIC, however, is that it ends with another conditional-linker *to,* making the whole construction another antecedent. Though its consequent can be either ostensive (*osorosii* 'terrified'; *zotto.suru* 'shudder') or non-ostensive, Japanese requires this third layer of the insubordination construction.

I raise two issues: (i) How is the interpretation of a negative emotive valuation obtained so clearly without the ostensive consequent; (ii) Why is the EIC embedded in yet another antecedent in Japanese? For (i), my corpus analysis shows that the *-tara to omou to* construction associated with a negative valuation has been entrenched and constructionalized. For (ii), I argue (see Figure 4) that the higher-order antecedent (with the final *to* 'as/when') builds an on-site emotive mental-space and triggers how the speaker feels now in the speech site as a result of imagining the counterfactual situation. It thus highlights the speaker's fear in the speech site, whereas English EIC highlights the speaker's imagination of her negative emotion in the counterfactual space.

In conclusion, this paper shows that certain patterns of antecedents constitute well-entrenched, yet language-specific, embedded insubordination constructions that are associated with specific functions of building multiple mental spaces that convey stacks of viewpoints.

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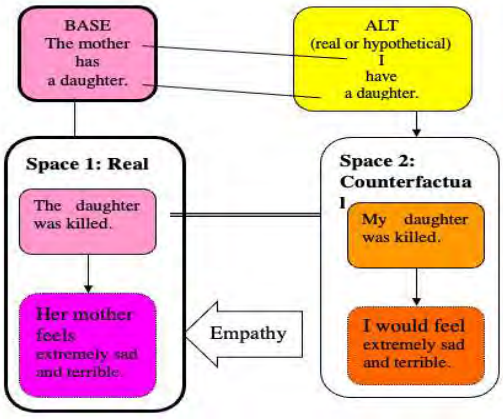


Fig. 1 The antecedent-only construction
If it was my daughter.

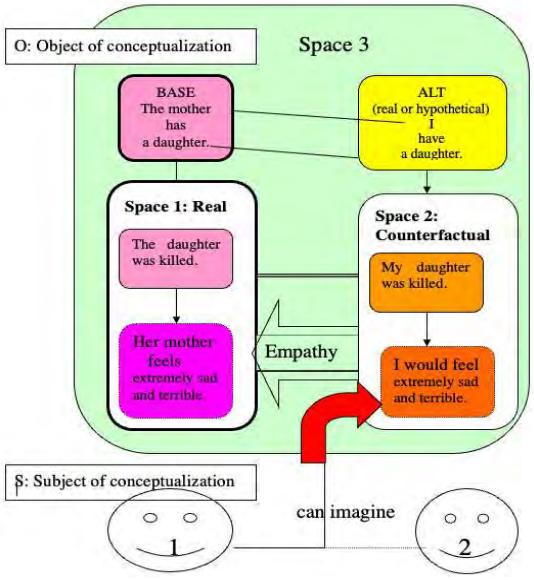
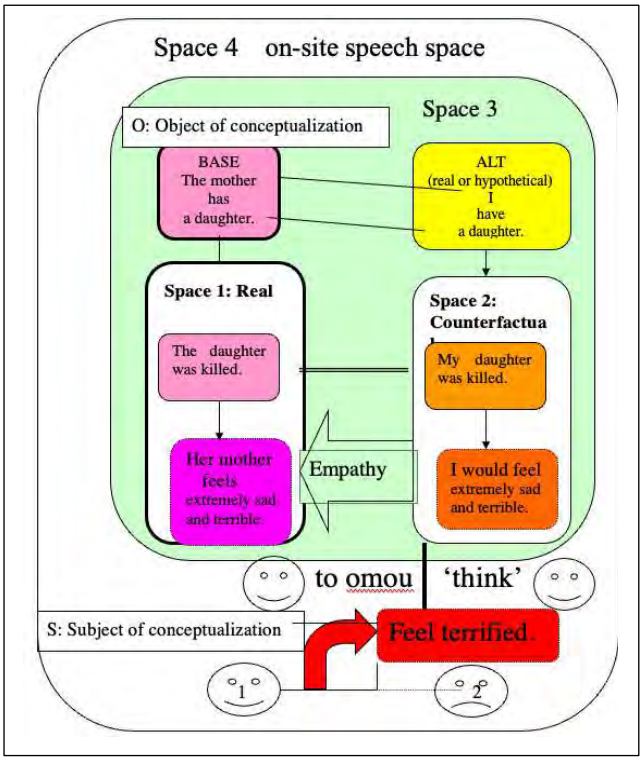


Fig. 2 The antecedent-only construction embedded in the complement of 'imagine'
I can just imagine if it was my daughter.

Fig. 3 The antecedent-only construction
(kore ga) zibun no musume dattara
(this NOM)(my-)self GEN daughter COP-Cond(if)
Lit. If (it was) my daughter.

<See Figure 1.>



FiFig. 4 The antecedent only construction embedded in the complement of omou 'think' ('imagine')
zibun no musume dattara to omou to.
(my-)self GEN daughter COP-Cond(if) QUO think Cond(if/when)
Lit. As/when/if (I) think if (it was) my daughter.

Mental space compression in ancient myths

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Keywords: Blending, Compression, Scripts, Myths

Ancient myths often include details that are incongruous with the events of the main story space. For instance, a major section of *Iliad* 24 (lines 143-484) describes the journey of Priam, king of the Trojans, to the tent of Achilles, his son's killer. This main story space, which on the most immediate layer of interpretation exclusively takes place between Troy and the Achaean military camp, has long been noted to include several allusions to a journey to the land of the dead (see Herrero de Jáuregui 2011 for a detailed discussion). Though never made explicit by the poet, this theme is hinted at by several incongruous language choices, pivotal elements of a hidden narrative with parallels in other Ancient Greek texts that explicitly attest to this theme, such as the "instructions to the dead" occurring in Orphic golden leaves. Traditionally, such cases within a Homeric narrative have been taken just as "allusions" to different themes, and have been exclusively studied from the perspectives of philology and literary criticism (see most recently Currie 2016).

As argued in Bonifazi 2018, however, from a cognitive-linguistic perspective what allowed Ancient Greek poets to simultaneously evoke multiple distinct narrative themes within a single oral performance is Conceptual Blending (Fauconnier & Turner 2002): originally distinct portions of thought – mental spaces – may be compressed into new, more complex spaces, called blends. Any blend, in turn, "can be unpacked to access the network of connections that make it meaningful" (Pagán Cánovas & Turner 2016:46). We posit that the mentioned incongruities/clashes in *Iliad* 24 reflect a compression - within blended mental spaces - of frames and scripts from different main story spaces.

In order to demonstrate that, we compare the incongruities in *Iliad* 24 with further incongruities occurring in two mythological accounts that, unlike *Iliad* 24, explicitly mention a journey to the land of the dead: the *Homeric Hymn to Demeter* narrating Demeter's and Hermes's search for goddess Persephone, and the Old Norse "Myth of Baldr's Death" in *Gylfaginning* 49, narrating Hermóðr's search for the "dead" god Baldr. The analysis draws from Ginevra's (2019, 2020) comparative analysis of linguistic constructions identifying several parallels and differences between the two myths.

We isolate several NP and VP constructions that represent blended mental spaces revealing incongruities in these three main stories, and we unpack these blends with the help of a cognitive linguistic methodology (Bonifazi 2018: 128-135). See the example at the end of this text.

The data suggest that in these blended spaces the incongruous element works like a frame metonymy, as it activates a whole traditional script beyond the current narrative, such as the "ransom" script, the "quest" script, the "hospitality" script, and the "journey to the land of the dead" script.

More generally, our analysis advances that certain linguistic constructions in ancient myths constitute tangible traces of a long process of oral composition within which multiple distinct traditions of various origin progressively came to be compressed into single (blended) stories and single (blended) story details.

	Blend	Incongruity	Decompression
***Iliad* 24 473ff**	"(Priam entered the tent) where Achilles, dear to Zeus, was accustomed to sit (*hízeske*). There he found him (*en dé min autòn / heûr'*)"	The construction [Subj *hízeske*] 'X was accustomed to sit' is never used for tents.	**Input space 1:** "Journey to the land of the dead": **Detail 1:** hero finds "Lord of Dead" sitting on a special seat. **Input space 2** "Priam's visit to Achilles" **Detail 2:** Priam finds Achilles in his tent.
***Hymn Dem.* 342f**	"[Hermes] found the [Realm of the Dead's] lord (*ánakta*; Hades) within his mansions, seated on a (funeral) couch (*hḗmenon en lechéessi*) with his modest consort (Persephone)"	Apparently, Hermes finds Hades seated with his wife Persephone, but the construction [*en lechéessi*] 'on the funeral couch' is used for corpses and implies that Persephone is dead.	**Input space 1:** "Journey to the land of the dead": **Detail 1:** hero finds "Lord of Dead" sitting on a special seat. **Input space 2**: Hermes's journey in search for Persephone **Detail 2:** Hermes needs to find "dead" goddess Persephone.
***Gylf.* 49**	"(Hermóðr) saw sitting there (*sá þar sitja*) in the seat of honour (*í ǫndugi*) his brother Baldr"	The Land of the Dead is supposed to be a grim place in Scandinavian mythology, but the construction X *sitja í ǫndugi* "X sits in the seat of honour" evokes the semantic frame HOSPITALITY in Old Norse.	**Input space 1:** "Journey to the land of the dead": **Detail 1:** hero finds "Lord of Dead" sitting on a special seat. **Input space 2**: Hermóðr's journey in search for Baldr. **Detail 2:** Hermóðr needs to find the dead god Baldr.

Table 1: blended spaces indexing the traditional script "journey to the land of the dead" in three different myths

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Climate change discourse: viewpoint and blending in multimodal artifacts

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Keywords: multimodality, viewpoint, climate change

Environmental activists have created a robust discourse, particularly via multimodal artifacts, in an attempt to persuade the public that climate change is a pressing issue that requires immediate action. From the perspective of an analyst, it's clear that most of the artifacts produced rely on patterns of meaning construction routinely studied by cognitive linguists: blending, metonymy, frame evocation, metaphor, etcetera. However, many such campaigns do not seem to be particularly effective. In this paper, I focus on the work produced by an environmental activist group called Extinction Rebellion (XR) whose posters are unusually striking and persuasive. I investigate the underlying conceptual mechanisms used in XR's posters (available online) to understand the specific combination of conceptualizations used in their discourse. I argue that XR's persuasive power comes from their heavy reliance on patterns of embodiment, and that their effective use of lower-level profiling mechanisms, such as image schemas, alongside representations of experiential concepts, serve to attract viewers' attention and thus facilitate decoding. Unlike many rote depictions of climate change that focus on elements in the environment, XR posters often place the human body at the center of the blends that they create and conflate the human form and the natural world.

Examples include a melting glacier represented via a human form barely able to remain afloat, alongside the imperative, "Act Now" (see Figure 1), or a swarm of bees arranged into the shape of a human skull (see Figure 2). I discuss how depictions of relevant human body parts-- such as a drowning face, or a skull--and their concomitant metonymic and metaphoric associations facilitates viewers' grasp of the experiential impact of climate change consequences. The multimodal artifacts and images analyzed exhibit striking blends whose intricate viewpoint pattern is not readily transparent, yet provide an experiential perspective of ecological crisis that is visceral and persuasive, while remaining richly ambiguous. My analysis relies on the concepts introduced in Conceptual Blending Theory (Fauconnier 1985; Fauconnier & Turner 2002). Particularly germane are the effects of compressions across vital relations of time and causation, in tandem with theoretical representations of viewpoint (Dancygier 2012; Dancygier & Vandelanotte 2017), especially experiential viewpoint. The conceptual patterns identified coerce viewers into reconceptualizing the ramifications of climate change as proximal and deadly (rather than distal and benign).

The analysis provides further analytical grounding for the investigation of the persuasive power of multimodal artifacts. The contemporary public is bombarded with such discourse on a regular basis and it's becoming clear that producers of multimodal campaigns consider intricate blends to be effective by the very virtue of being eye-catching and intellectually challenging. However, my analysis suggests embodiment and experiential viewpoint may be the necessary ingredients for successful multimodal persuasion.

Figure 1

Figure 2

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Blended spaces in simultaneous interpreting: Signers' and gesturers' subjective representations of speakers' texts.

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Keywords: Blending, Simultaneous interpreting, Input spaces, Gesture, Construal

In a study on visualization in simultaneous interpreting, interpreters' texts show blending of elements from the source speakers' texts (texts that the interpreters interpret into another language) with elements of the interpreters' conceptualizations of those texts, filtered through their own subjective experiences, which might differ significantly. This study analyzes interpreters' processing of textual information as forming blended spaces (Fauconnier and Turner 2002) from a complex of input spaces. Interesting here is that the interpreter is not just listening to the speaker and attempting to understand them, but is doing so because they have a meaning-dependent linguistic task to perform, that is, they must reconstruct the meaning they believe the speaker intends, and convey this in a different language to their audience. We contend that the interpreter's output in this task directly links to the blended mental spaces they construct.

This study seeks to elucidate the input spaces that lead to blended spaces, and thereby to the constructed meaning as expressed in the interpreter's target text. Schematically, the input spaces for the interpreter are 1) real space: the input signal is located here, as are the speaker's and interpreter's gesture/signing space, along with the recipients of the interpretation; 2) the speaker's linguistic expressions: what the speaker says (as a resource to constructing meaning, including multimodal expressions, linked to real space); 3) the conceptualization/construal of speaker meaning; 4) the interpreter's conceptualized past space: embodied interactions with past objects/people and past spaces; 5) the target linguistic expressions/representation: necessitates reconceptualizing the input text in terms of another language/culture; and 6) the intersubjective conceptualization of the target audience: assessment of the input text/target audience "fit". This schematic complex of input spaces is elaborated in this presentation with examples from the visualization study. We conclude that from this array of input spaces, the success of the interpretation depends in large part on the alignment of the interpreter's meaningful blended spaces to the input speaker's intended meaning.

This work draws on a larger study of spoken-to-spoken language interpreters (n=8) and spoken-to-signed language interpreters (n=6) working from two common spoken English language texts. Each interpreter's task was to interpret two source texts into their target language, immediately followed by a "Think Aloud Protocol" (TAP) where the interpreter talked about their visualization processes during the task, and how they determined meaning. Both the simultaneous interpretation task and the TAP were videorecorded.

Both the speakers' gestures and the interpreters' subsequent gestures are informative in how the interpreters construct meaning. In Example 1 below, the input spaces result in the blended metaphor UNFAMILIARITY IS DISTANCE, which attributes the interpreter's construal of the situation to speaker meaning, that is, the extreme distance of China/lack of familiarity, when in fact, this was not the case (see Janzen, Shaffer and Leeson, in press).

Results show that numerous blended spaces were created from multiple input spaces. At times, there was evident conceptual alignment between the source speaker's and the interpreter's text, informed by alignment between the speaker's and interpreter's gestures. However, at times the blends show non-alignment both in the gestures and conceptually.

Example 1: “My son moved all the way to China.”

Input space	Source speaker	Interpreter
Speaker’s linguistic expression (English) (2)	to China	
Interpreter’s linguistic expression (ASL) (5)		CHINA
Real space (1)	Proximal central space, within the speaker’s gaze Palm up open hand (2 hands)	High distal space, outside the interpreter’s gaze Pointing gesture
Conceptualized past experience (4)	First-hand experience	Inexperience
Conceptualized speaker meaning (3)		Inexperience

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The Future is Now: Blending theory and the reconfiguration of the climate crisis

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Keywords: Blending, Viewpoint, Climate change, Framing, Multimodality

I apply Fauconnier and Turner's blending theory (2002) to three artefacts: a meme (Fig . 1); a poem entitled Letter to Noah's Wife (Popa 2019); and a short film called A Message from the Future (Boekbinder and Batt 2019). All three pieces negotiate multiple viewpoints (Dancygier and Vandelanotte 2016) as they attempt to reconstrue the audience's conceptualization of the climate crisis. Effectively communicating about climate change involves addressing the problem of scale. Temporally distant events must be understood as immediately urgent, and contingent upon present day decisions. In each of these pieces, this problem is addressed using the mechanism of compression, which reduces the conceptual distance between the climate present and the climate future. Through this mechanism, imagined futures are used as a framework through which to conceptualize the climate crisis. This allows the viewer to reason backwards, inferring the creator's viewpoint of the present on the basis of their representation of the future. Through this, it is possible to circumvent the need to offer specifics about the causes that this imagined future is conditional upon, as this can be extrapolated on the basis of the future scenario that is proposed. My analysis demonstrates that this pattern of reasoning is employed to different effect across each of these three artefacts. This logic is essential to climate change communication, which is inherently steeped in uncertainty. By its nature, it is required to make claims about the future that do not have a certain grounding in the present.

To achieve this conceptual compression, it is necessary first to evoke representations of both the present and the future. In each of the artefacts, these input spaces appear within a distinct organizing frame (Fillmore 1976). For the meme (Fig. 1), the climate future and the climate present input spaces, evoked by the labels, are scaffolded by the image macro, which provides the organizing frame of the Ever Given Suez Canal shipping disaster. The image provides the scalar mismatch between problem and solution, which is interpreted as suggesting our current climate change mitigation efforts to be insufficient. The other artefacts, by contrast, employ radically different organizing frames. The poem draws on Noah's ark and the Biblical flood, underscoring the inevitability of the climate crisis whilst pointing to the potential for future renewal. The film draws instead on a utopic representation of a future in which we successfully address climate change, profiling the American political context.

Crucially, my analysis demonstrates that despite the differences in the organizing frames, and the genre-specific conventions of each artefact, the same pattern appears consistently; cause and effect are compressed, so that the specific reasons for the appearance of a particular climate future are obscured. Examining these artefacts therefore reveals a fundamental problem of climate change communication. By structuring the present in terms of an imagined future, we are obscuring the need to define the actions that we will take, or avoid taking, in order to bring this future about.

Fig. 1 Meme depicting the Ever Given stuck in the Suez Canal

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"*What Happened to My Body My Choice?*": Viewpoint Stacking and the Construal of Picket Signs

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Keywords: my body my choice, picket signs, viewpoint, viewpoint networks, multilayered meaning constructions, intertextuality

This paper aims to analyze meaning constructions in picket signs containing *My Body My Choice* (MBMC) within a Viewpoint Spaces network (Dancygier, 2012). It is specifically concerned with the multilayered conceptual structures where viewpoints are stacked in the construal of the picket sign. It reads as follows: Since it is about my body, it should be I, no one else, who decides what to do to it. It is noted, however, that the phrase is not newly created against COVID-19 vaccine mandates: it has been used in the abortion-rights movement.

This paper argues that *MBMC* together with its adjacent phrase superimposed on it in the picket sign cues multiple conceptual layers where viewpoints are implicitly (de-)compressed: one fully understands it when learning among other pertinently assumed information, for example, that those who would use the phrase in an anti-vaccination rally are unlikely to be those who would for the abortion-rights movement, even though the phrase is ostensibly employed to invariably support one's own bodily autonomy. This makes another good source of multilayered meaning constructions as the phrase is situated in another conventional form of discourse structure, i.e., a picket sign, which is designed to publicly express the picket maker's idea with syntactically truncated forms that cue viewpoint stacking as in (1) and (2).

(1) I call the shots / My Body My Choice
(2) My Body / My Choice / includes / vaccines / too

On the one hand, the phrase *I call the shots* in (1) idiomatically indicates that it is the speaker who has control in whatever matters to be said, and it conforms to the picket sign's intended argument for securing one's own bodily autonomy. Due to the literal meaning of the lexical item *shot* in the phrase, the picket sign could convey a blended construal that may profile either the lexical meaning or the whole idiomatic meaning. At any rate, the picket sign maker avows that he or she is the one who decides regarding the issues of COVID-19 vaccines.

On the other hand, example (2) indicates that the rationale behind bodily autonomy should hold consistently for the issue of vaccine mandates as well as for that of abortion, signaling that more conceptual layers are involved: the situation evoked by the content of the phrase (i.e., *MBMC* in the abortion-rights movement); the situation where a picket sign maker frames it as a fossilized phrase in a different situation (i.e., *MBMC includes vaccines, too* in an anti-vaccination rally); the situation where the picket holder sympathizes with the maker's intention (i.e., (I support that) *MBMC includes vaccines, too*) in the presence of viewers, etc. Hence, *MBMC* in (2) does not seem to reside in the same layer as the rest of the text, considering that its conventionalized meaning has already been reified into a grammatical subject.

Among others, this paper specifically investigates those with invoked frames including abortion-rights such as *What Happened to MBMC*, *MBMC Includes Vaccination, too*, *Your body my choice* etc. by modeling and generalizing over the conceptual structures behind the construals. This paper provides an elaborate account of how multiple pieces of knowledge of different viewpoints are stacked and (de-)compressed into the overall construal, such as invoked frame knowledge of the abortion-rights movement, presupposed knowledge triggered by linguistic constructs etc.

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Viewpoint embedding in the life stories of people with schizophrenia.

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Keywords: Mental Space Theory, Viewpoint, Embedding, Blending, Schizophrenia, Narrative

People with a schizophrenia diagnosis are hypothesized to experience difficulties with perspective-taking (e.g., Fuchs & Röhricht, 2017). To illuminate these difficulties, we use Mental Space Theory (Fauconnier, 1985) to analyze in a series of three studies the linguistic embedding of viewpoints in the life stories of people with schizophrenia (collected by the third author between 2018 and 2020). In the first study we build on basic notions of Mental Space Theory to develop the Deictic Navigation Network (DNN), a framework to analyze and clarify the nature of viewpoint disturbances in natural discourse. The framework rests on the notion that cognitive deficits in recognizing and distinguishing viewpoints parallel linguistic expressions of viewpoint in intersubjective discourse, in particular deictic expressions, speech and thought reports and implicit viewpoints. These expressions reflect how speakers embed and navigate between multiple viewpoints in the here-and-now Speech Act Domain and the there-and-then Narrative Domain. Accordingly, analyzing these expressions can elucidate the perspective-taking abilities of the Speaker and, importantly, help to localize potential viewpoint disturbances such as "loosing track", resulting in involuntarily blending of spaces.

In study 2, we apply the DNN to the life story of a person diagnosed with schizophrenia and analyze in detail the linguistic manifestation of viewpoint constructions. These constructions are found to emerge from the use of tense shifts, spatial deixis, and speech and thought reports. The analysis elucidates the complexity of managing multiple viewpoints in conversational narrative, both in linguistic and cognitive respect. The results furthermore reveal the Speaker's difficulties with separating between viewpoints anchored in different domains and to maintain viewpoint stability, as indicated by inconsistent use of spatial deictic adverbs and tense shifts. Thus, the DNN helps to pinpoint individual perspective-taking problems, specifying the ways in which people with a schizophrenia diagnosis might struggle with particular viewpoint presentation difficulties.

In study 3, we use the DNN to quantitatively analyze viewpoint embedding and navigation in a corpus of life stories told by people with schizophrenia (> 5,000 clauses). Results show that in general, Speakers were able to skillfully embed viewpoints other than their own current viewpoint. Shifts between the Speech Act Domain and the Narrative Domain were in most cases explicitly marked by means of a tense shift or temporal adverb, reflecting the ability to clearly distinguish between multiple viewpoints and domains and to avoid involuntarily blending of spaces.

In the final part of this talk, we will reflect on how Mental Space Theory can help to bridge the gap between phenomenological theory about schizophrenia and empirical research. We will furthermore discuss if and how Mental Space Theory can be of value to research in the fields of psychopathology and psychiatry that aims to understand the nature of mental illnesses. Finally, we will reflect on the application of Mental Space Theory for categorizing, coding and analyzing linguistic elements that signify mental spaces and domains and their embedding and blending in discourse of significant length and complexity, or even in larger corpora.

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Space embedding and epistemic stance: A Mental-space approach to *I promise* and *I guarantee* constructions

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Keywords: I promise/guarantee construction, commissive/epistemic modal, comparison, usage-based, mental spaces

Humans are uniquely capable of conjecturing about mental spaces that are not indexically accessible at the speech time. The ability to conceptually accommodate such information entails (at least) two domains: a base SPEECH-ACT domain where the speaker converses with the addressee(s) by means of such an utterance, and a CONTENT domain where the content of the utterance takes place. This multilayered conceptual structure may well be reified in complex sentences containing so-called world-creating predicates (McCawley, 1993) such as, in English, *think*, *believe*, *regret*, and *promise*.

Among the various multilayered constructions of world-creating predicates, this study conducts a comparative investigation of two English constructions, *I promise* (*you*) + X and *I guarantee* (*you*) + X constructions, whose construal revolves around the speaker's commitment to making a situation happen and/or to vouching for the validity of the embedded clause X.

(1) a. *I promise we'll come right back. Please stay with us*.
b. *Once we've made an arrest, I guarantee I'll get you that answer*.
(2) a. … *And I did my best to get it in at 14 minutes. I promise I tried*.
b. *I guarantee I had more fun than you guys did*.

In the examples in (1), the lower clause situation (i.e., *we'll come right back* in (1a) and *I'll get you that answer* in (1b)) has not taken place, but in the speaker's belief space it will take place, particularly because the speaker commits him/herself to making it happen. In (1a), for example, the speaker, the show host, has knowledge of the upcoming schedule, and is thus sure that he will make the focal situation happen. However, as shown in (2), they are also employed in past-tense situations, both of which carry epistemic modal meaning that the speaker vouches for the factual validity of the lower clause information.

This study investigates how the two constructions are used epistemically, especially in its colloquial uses, and how the different conceptual structures underlying the construals of the commissive and the epistemic modal senses of the constructions can be modeled within Mental-spaces theory (Fauconnier, 1997). By modeling the conceptual structures by means of space-embedding and profiling (Langacker, 1991), this paper contends that the speaker's commitment to the occurrence of the focal situation is necessarily involved in the default conceptualization of *I promise* constructions, but not of the other. As shown in Figures 1 and 2, the MST framework transparently captures the functional difference in these conceptual structures, which relies on whether the situation (SIT) explicitly described in the embedded clause accommodates an imperfective situation (the speaker's (S) commitment to continue to talk about the subject matter (SBJM) in (1a)) or an unprofiled situation where the addressee (H) realizes the perfective content (CONT) as fact (the speaker's epistemic stance in (2)) (Kwon 2021). This study also focuses on constructional cues in complex-clause utterances of the form *I promise*/ *guarantee* X: whether or not the subject of the embedded clause X is congruent with 'I' in the main clause and whether the tense of X is past or non-past. In analyzing their spoken tokens from the Corpus of Contemporary American English (COCA), three types of construals were identified: commissive, epistemic modal, or both. While the *I promise* construction can have any of the three, the *I guarantee* construction never has the commissive construal alone. The frequency data indicate that the distinctive conceptual structures motivate their functional distributions

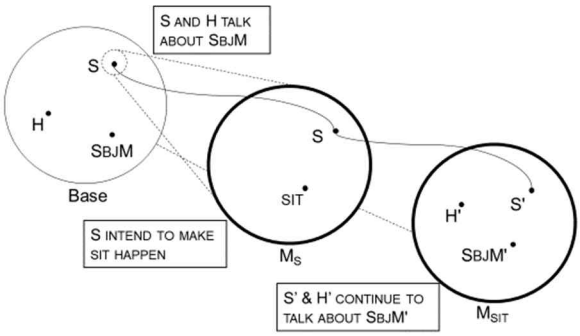

Fig. 1: Representation of (1a)

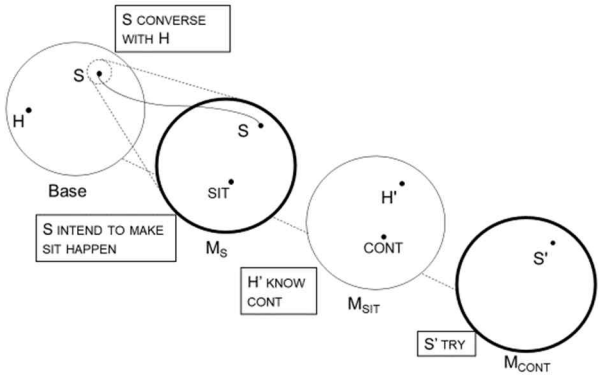

Fig. 2. Representation of (2a)

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Gesture space ambiguity as conceptual integration

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Keywords: gesture, multimodality, mental spaces, blending

In face-to-face interaction, speakers spatially organize discourse through gesture (Kendon 2004). Particular regions of space become meaningful through cooperative actions of participants – different topics, times, and possibilities are metaphorically placed and referred to in different locations (Azar & Özyürek 2015, McNeill 2003, McNeill et al 1993). This spatial organization can be conceptualized as mental space organization (Sweetser 2007). Speakers also gesture toward the same location when discussing *different* referents and topics, resulting in ambiguities as to what a particular region of space means. I argue that this "stacking" of multiple metaphoric objects physically enacts conceptual integration (i.e. “blending”; Fauconnier & Turner 1998).

The present work concerns gestures that contribute to discourse management and the maintenance of a social interaction. Following Bavelas et al (1992), I refer to these as interactive gestures. Nearly all interactive gestures enact a form of conceptual integration, minimally blending the real physical space between interlocutors with a metaphoric space in which a discourse is constructed via the manipulation of metaphoric objects (Wehling 2017). Though the metaphoric nature of these gestures is widely acknowledged (Cienki & Müller 2008, Müller 2017, Streeck 2009), their capacity to express conceptual integration has not been sufficiently explored. I refer to this capacity as *multimodal conceptual integration*, and consider two subtypes in this work.

In the first, counterparts of a metaphoric blend are placed, as metaphoric objects, in the same region of space. I argue that this “stacking” of metaphoric objects reinforces the conceptual link between introduced topics. This is especially apparent in cases of *contrast*, in which one set of metaphorically related concepts is contrasted with another by forming two spatially separated stacks. The second form of multimodal conceptual integration relates to the blending of a co-present interlocutor with a non-present character. In these narrative uses, the gesturer deictically refers to a co-present interlocutor in gesture as they refer to an imagined character in speech. Unlike the first, these gestures do not serve to reinforce an analogical connection between the interlocutor and character. Instead, I argue that this deictic conflation of referents serves to express the viewpoint the interlocutor is meant to take. The interlocutor is invited to experience the ongoing narration from the character’s viewpoint, resulting in a complex blend of DISCOURSE SPACE and NARRATIVE SPACE.

Through four micro-analyses of gesture sequences, I demonstrate the use of interactive gesture as a tool for expressing conceptual integration in these two ways. All data comes from English-speaking dyads on American talk shows, collected using UCLA’s Communication Studies Archive in collaboration with the Red Hen Lab. Relevant data was identified during a larger corpus study regarding the correlations between interactive gesture and discourse relations.

The present work contributes to our understanding of both conceptual integration and interactive gesture. First, it contributes empirically to our understanding of conceptual integration expression by presenting novel multimodal data. Second, it relates types of interactive gesture directly to types of conceptual integration, furthering established discussions of the connections between gesture and mental spaces more generally.

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Scalar Reasoning in Macroeconomics: The Rhetorical Oddities of *Even*

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Keywords: Gilles Fauconnier, Pragmatic Scales, Mental Spaces

Among Gilles Fauconnier's many contributions to Cognitive Linguistics includes his earlier work on pragmatic scales as a means of integrating logical semantics and pragmatics. More specifically, pragmatic scales accounts for the "logical properties of sentence" that "are not necessarily represented in logical form" (1975:374). The existence of pragmatic scales led to the broader theory of language captured in mental spaces and, later, blending theory. This talk builds on this early work of Fauconnier and pairs it with subsequent treatments of scalar reasoning by Kay (1990) and Israel (2011) by examining the uses of *even* as an affirmation, concessive, and refutation technique taken from the work of prominent economists writing from the early- to -mid-twentieth century to today.

More specifically, this talk reports of uses of *even* in 20th-century writings on monetary and fiscal policy as represented by the 1931 debate between Friedrich Hayek and John Maynard Keynes on Keynes's "Pure Theory of Money," as well as post-Keynesian accounts of "functional finance" over against "sound finance," and finally, recent statements by the Bank of England and other prominent central banks that the Loanable-Funds model, whereby prior bank deposits create loans, is false; rather, banks create deposits only after generating loans.

The counterintuitive nature of Keynsean and post-Keynsean accounts of capitalist economies entail the generation of mental spaces built on pragmatic scales that, following Israel (2011) are sensitive to two semantic properties: quantity (q-value) and informativeness (i-value), where q-values reflect relative positions (high-low) and i-values reflect rhetorical strength (strident-muted). Consistent with Kay (1990), the informative semantics associated with *even* can be mapped onto a valence axis of good←→bad, while quantity semantics can be mapped onto either an easy ←→hard or more ←→less axis.

Rhetorically, the purpose of these scalar mental spaces is to highlight the recalcitrance of the economist opponent ("even a thousand words of mine … have been water off a duck's back"); to concede a premise as preparation for positing an *argumentum ad absurdum* ("even if"); to highlight a fiscal or monetary policy's contradictory goals ("even as"); or to argue for the continued influence of an economist's theory ("even more relevant today"), among others. The goal of this talk is to highlight the range of mental space configurations used in conceptualizing either how the economy works against the received wisdom or to profile how an economic theory violates the received wisdom.

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Mouth actions and blended spaces in Quebec Sign Language (LSQ)

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Keywords: sign language, mouth actions, multimodality, perspective

The use of blended spaces in languages, as proposed by Fauconnier and Turner (1996), has been discussed for signed languages notably for the use of enactments (Ferrara & Johnston, 2014; Liddell & Metzger, 1998; Saunders & Parisot, submitted). Liddell & Metzger propose that enactment, also known as constructed action, in ASL is produced through the use of blended spaces where the signer (within the real space where his body is found) assumes the role of an actant (found in the mental space of the signer), by aligning his own body to that of the actant in order to represent the body of the actant by showing what he does, or says, directly to the audience (Liddell & Metzger, 1998, p. 669).

Crasborn et al. (2008) highlight five different functions of mouth actions, namely: spoken language mouthings, adverbial mouth actions, semantically empty, enacting and mouth activity. Dubuisson et al. (1999) identify the pragmatic nature of mouth actions with which the signers can produce their stance on what is being signed. For this study, we analyze two functions: adverbial (morphological) and stance-taking (pragmatic) mouth actions, to investigate whether adverbial and stance-taking mouth actions are produced in the same manner within and outside of enactments in LSQ, since space blending is embedded in the former when enactments are produced.

The dataset consists of 12 LSQ discourses produced by three Deaf LSQ signers as part of elicitation tasks based on four video stimuli of non-verbal events derived from 2 different scenarios. For each scenario two different videos are shown based on two different modes, descriptive and narrative) (the former includes slow and menial tasks, and the latter more expressive and lively actions produced by actors). These discourses, providing 89 minutes of material, are analyzed with the following variables: forms of mouth actions, their functions, and the presence of enactment.

136 mouth actions were identified, of which 101 were analyzed as adverbial and 35 as stance-taking. 84% of 136 adverbial mouth actions were found within enactment, when the signer aligns his body with the actant, while 91.4% of 35 stance-taking mouth actions were found in enactment. This raises questions concerning the blended spaces during when enactment is produced: notably when an enactment is produced, from the actant's perspective, the mouth actions (adverbial and stance-taking) are produced from the signer's perspective simultaneously. For example, a signer might sign with a classifier (an upright index finger) to illustrate that the actant is moving quickly in the signing space from the narrator's perspective, but he might also produce an enactment, by assuming the actant's attitude with his face and body to show the character's perspective. Furthermore, an adverbial mouth action, from the signer's perspective, might be produced simultaneously in a form of protruded lips to suggest the morphological intensity of the action. This highlights the need to discuss space blending with the notion of body partitioning (Dudis, 2004) for facial expressions, since facial articulators can be partitioned according to its functions, such as adverbial and stance-taking mouth actions.

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Blending spaces to compose speech and gesture meaning

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Keywords: Gesture, blends, mental spaces

Multimodal speech-gesture communication effortlessly integrates multiple meaningful systems. A hand rising, as a speaker says *things improved,* integrates with speech by metaphoric interpretation of the vertical spatial dimension; if the speech were *the ball flew past*, the hand's trajectory might iconically represent the ball's spatial path. Building on the work of signed-language analysts (starting with Liddell [1998], Taub [2001]), a mental spaces network model has been proposed (since Parrill and Sweetser 2004) to model the integration of spoken and gestural meaning, including iconic and metaphoric mappings.

This paper proposes a larger formal space-blending model, mapping discourse loci and bodily affordances into the network, for a fuller account of the co-emergence of meaning from language and bodily motion. The primary database is a sample corpus from interviews and talk shows in the Red Hen captioned television corpus.

The systems involved in this blending network include:

(1) conventional linguistic meaning and its contextual interpretation: **speech content** integrates with the rest of the multimodal communicative activity.

(2) inherent **meaningful aspects of body-inhabited space**: the meanings of bodily location in EGO-centric deictic space or of up/down in gravitic space, the meaningfulness of space in front of the body as action-space.

(3) **iconic, metonymic and metaphoric mappings** onto these spatial structures: an upward gesture could literally iconically depict a described motion, or metaphorically refer to Improvement (GOOD IS UP).

(4) spatial meaning developed from the history of discourse: **pointing at Topic loci** during speech, and **recurring use of once-established spatial areas/loci** to reanimate/maintain discourse reference.

One speaker, e.g., points upwards in talking about *abstract* concepts, and downwards in mentioning "concrete" data. The speech referents are the data and the concepts, not the spatial loci pointed at. The gesture builds iconic and deictic blends: it *depicts* upward motion away from Ego action-space, and deictically *points* at a higher location. This feeds a metaphoric blend of UP (source frame) with the target frame ABSTRACT (ABSTRACT IS UP and LESS ACCESSIBLE, CONCRETE IS DOWN and MORE ACCESSIBLE). That blend is prompted by and integrated with the linguistic references to abstraction and concreteness. Later, the speaker, re-referring to the previously-mentioned abstract concepts, re-points to the same location. This re-activates the iconic, deictic and metaphoric blends. It also blends the current point-locus with the *speech referent* (the *relevant* abstract concepts, not just "abstractness") *previously* associated with that locus. Previous uses of space in discourse make that space meaningful for later reference.

Reference to gestures as deictic OR iconic OR metaphoric are common, but this neglects the multi-layered blending structures. Metaphoric gestures commonly iconically represent the source domain, which then metaphorically blends with the target.

This virtuosic multimodality is utterly pedestrian. Listeners/viewers effortlessly follow such gesture-speech blends, even ones involving gestures representing two different bodily agents and viewpoints (cf. Dudis [2004] on ASL; Sweetser and Stec [2016], Sweetser [2013, 2023] on gesture). Even "simple" and "obvious" gestures involve several layers of blending, as seen above. This constant enactment and interpretation of very complex mental-space blends is all done by a single space-inhabiting body.

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Persistence of the Base

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Keywords: Mental Spaces, Conceptual Networks, Frame Semantics, Persistence of the Base, Scenario Forecasting

Fauconnier, throughout his work on mental space theory, emphasized the power of base spaces and the dependence of mental space networks on base frames. In Mappings in Thought and Language, Fauconnier (1997) discusses the example where Achilles sees a tortoise and chases it but, because the tortoise moves very fast, Achilles reassesses the situation and considers the possibility of the tortoise being, in fact, a hare. In his analysis, represented in the diagram in Figure 1, Fauconnier highlights the roles of space builders, such as maybe and if, and demonstrates the cross-space mappings needed for interpreting the short story on the fly.

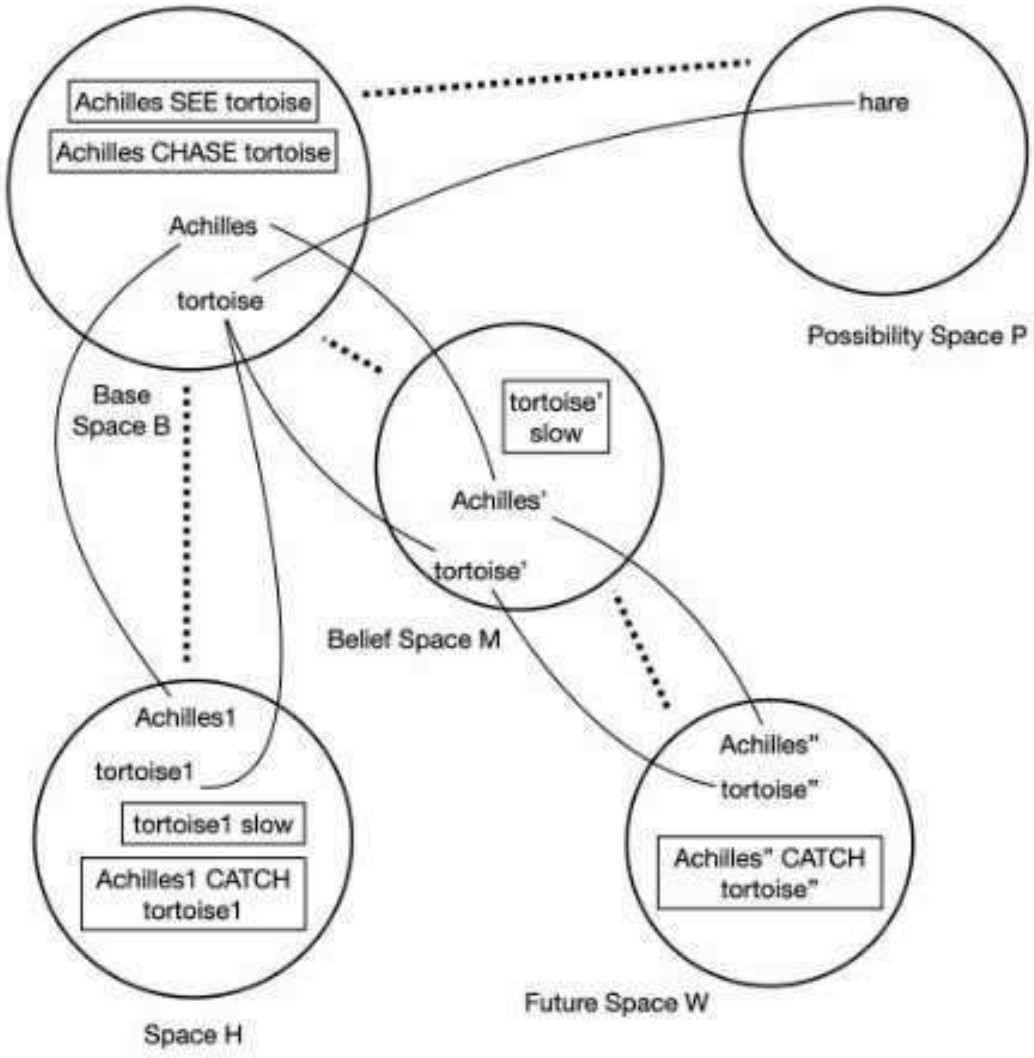

Fig. 1: Fauconnier's (1997) analysis of the Achilles and the tortoise chasing example

Adopting a distinct but related perspective, Fillmore, throughout his work on frame semantics, sustained

the claim that frames structure our experience in the world, being defined as systems of interrelated concepts (Fillmore, 1982), which may take alternating perspectives (Fillmore, 1985) and be organized in a network (Fillmore et al., 2003) In the Achilles and the tortoise example, the Cotheme frame (shown in Figure 2) is used to structure not only the Base space, but also the Belief and Future spaces.

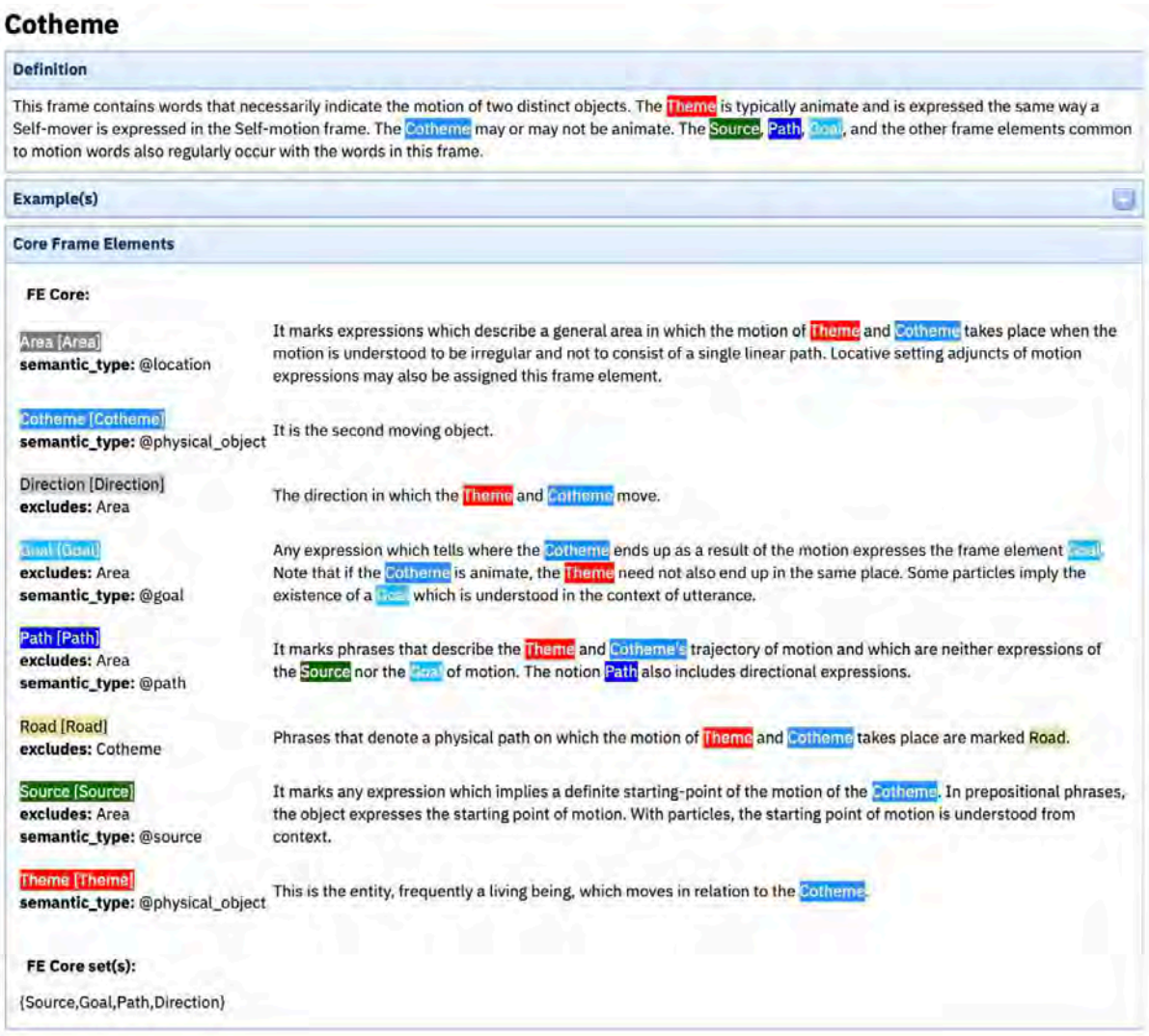

Fig. 2: The Cotheme frame in FrameNet

In this talk, we observe that even as spaces in a mental space network proliferate, and as their contents and connections are recast and rebuilt, base spaces and frames typically persist. Mental operations and communicative constructions needed for building such networks rely on and favor the persistence of the base. The base is especially central for imagining and understanding irrealis worlds, such as counterfactual, future, or fictional scenarios. We demonstrate specific patterns of base frame persistence by analyzing scenario forecasting, i.e. the exercise of predicting or constructing scenarios about the future of humanity. These scenario forecasts first establish a base built on current shared knowledge; then, multimodal prompts guide us to extend that base in imagining yet-to-be-seen worlds, and to make inferences about how to deal with them and navigate within them. The persistence of the base is the central cognitive asset of imagining and communicating these elaborate futuristic mental space networks.

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Reconciling layers of discourse in *Dungeons & Dragons* through the Discourse Viewpoint Space

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Keywords: Viewpoint, Discourse Analysis, Interactive Fiction, Mental Spaces, Conceptual Blending

This paper analyzes instances of unexpected merging of player and character discourse spaces that arise in sessions of the roleplaying game *Dungeons & Dragons* (*D&D*).The question I seek to answer through this paper is: How are the viewpoints needed to inhabit the mental spaces of *D&D* understood and reconciled from the perspective of the Discourse Viewpoint Space? Looking at campaigns from two YouTube series, *Critical Role* and *High Rollers*, I identify the network of interactions required by the performers, including "in-character" performances, "out of character" interactions, and liminal components of the game, such as rolling dice to determine in-game events. After establishing the boundaries of these mental spaces, I focus on instances where these spaces blend, such as pop culture references being used in-game, to demonstrate the necessity of a Discourse Viewpoint Space, a "higher-level discourse space" within which multiple viewpoints can be reconciled (Dancygier & Vandelanotte 2017, p. 570). Understanding the flow of multiple discourse spaces in a setting such as a role-playing game is driven by complex viewpoint networks, and can partly be identified through the features of speech (such as using an accent when in character). By focusing on instances of unexpected merging of character and player, my paper analyzes the means by which players integrate multiple viewpoints when playing *D&D*, and how this integration is necessary to strengthen what Banks et al. (2018) refer to as player-avatar relationships.

To obtain my data, I chose one episode from each YouTube channel; a 100th episode special, and an episode performed in front of a live audience respectively. These episodes would be more likely to include instances of players blending the viewpoints of their characters and themselves, and as both take place in the second half of their respective campaigns, players will have spent enough time developing their characters and community that inside jokes are more likely to appear. The selected excerpts from these episodes are analyzed to determine how metonymy and blending work across player and character mental spaces to allow for the recognition and processing of various levels of discourse and viewpoint. Examples include identifying elements of the scene that contribute to frame metonymy, such as a player invoking a voice or gesture indicative of their character, or the blending of both player and character viewpoints via a pop culture joke. As a hypothetical example, if the characters are eating at a tavern, and one quotes the McDonald's "I'm Lovin' It!" jingle, players must take a number of steps before responding to the situation, beginning with recognizing the jingle out-of-game and metonymically linking it to their in-game action of eating at the medieval equivalent of a restaurant. The clashing viewpoints between their identities as characters and players must then be resolved to blend the spaces together and consider what out-of-game information, if any, can inform their character's response. In analyzing how this blending of viewpoints across mental spaces is achieved in this unique setting, this paper proposes an approach to the construction of character identity in interactive fiction.

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Multimodal stance-taking in gesture and sign

Convenors: Geert Brône, Fien Andries, Clarissa De Vries, Kurt Feyaerts, Katharina Meissl, Bert Oben, Paul Sambre, and Myriam Vermeerbergen

Enactment in contrasting stance acts: a multimodal corpus-based approach

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Keywords: Enactment, Stance-taking, Multimodality

Enactment is an important vehicle to express a stance in interaction. Multimodal enactments and depictions (Clark 2016), "used by signers and speakers to 'show' meaning rather than describe it" (Ferrara & Hodge 2018: 5; see also Cormier, Smith & Sevcikova-Sehyr 2015) are well-suited to express stance, as they allow, among others, for a simultaneous display of both the stance object and an implicit evaluation thereof (Niemelä 2010). However, the question of how such layered stance acts are sequentially organized in interaction remains largely unexplored.

We tackle this question by investigating enactments that are embedded in sequences of contrasting stances, which contain both a positive and negative stance regarding a similar referent. These allow us to scrutinize how stance-taking and enactment are connected, based on their polarity. Specifically, we zoom in on the delineation of both the polarity (i.e. the switch from a positive to a negative stance and vice versa) and the delineation of the enactment (i.e. the switch from enactment to the base layer of interaction (Clark 1996) and vice versa).

Furthermore, we compare the multimodal realization of these cases in three different settings: (1) narrations, taken from the corpus VGT (Flemish Sign Language) (Van Herreweghe et al. 2015), in which participants frequently express a stance on the stories they share with each other and may use enactment to report a stance they distance themselves from; (2) Orchestra rehearsals (Schrooten & Feyaerts 2020), where conductors frequently offer contrastive instructions, expressing both a desired and undesired performance, juxtaposed and in spoken as well as enacted format; (3) Spontaneous face-to-face interaction (de Vries, Oben & Brône), where stance-acts can function as a starting point for joint fantasies, including enactments, that present a playful layered comment on the stance at hand.

This specific constellation of corpora allows us to disentangle the delineation of stance in different communicative settings (instructional, narrative, humorous) as well as languages in different modalities/communities (VGT and Dutch). From each of these corpora, 10 sequences will be selected for a microanalysis using a unified annotation scheme in ELAN (Wittenburg et al. 2006) to ensure comparability. In our analysis, we will pay close attention to body orientation, gaze behavior, facial expressions, manual gesture, and for the spoken data, prosody (pitch range and voice quality).

First explorative analyses show that in the instructional setting of orchestra rehearsals, the distinction between positive and negative stances is more clearly delineated given the didactic goal, whereas in playful interaction among students ambiguity is preferred, resulting in implicit contrasts. Similarly, during narratives signers quickly shift back and forth between different degrees of enactment and simultaneously present information from different viewpoints. As a result, we could expect remains of the negative assessment to be present during the positive enactment and vice versa.

In sum, in this contribution we aim to map out different types of stance contrast in enactment, including their verbal and visual framing, in different interactional settings as well as languages.

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Variable embodiment of stance-taking and footing in simultaneous interpreting

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Keywords: Stance, Footing, Simultaneous interpreting, Gesture, Mental simulation

Stance-taking (Biber & Finegan, 1989) involves different aspects of the speaker's mental state, e.g., the degree of *certainty* about what one is communicating (epistemic stance), the *importance* of the information and the degree to which it is in focus (relevance stance), or one's *affectual* and *attitudinal relation* to what is being communicated. Footing (Goffman, 1981), in turn, involves the speaker's epistemic authority over the content of the utterance (in the *principal* role), the speaker's responsibility for constructing the utterance (as the *author*), and their role as 'sounding box' producing the utterance (the *animator*).

We consider different functions of gestures and how viewing them through the lenses of footing and stance-taking can help us gain further insights into what may be involved in simultaneous interpreters' processes of thinking for speaking (Slobin, 1987). Our particular focus for this is on gestures produced during moments of disfluency in the interpreters' speech.

Forty nine interpreters working between Russian and either English or German interpreted ten minutes of a popular scientific lecture (e.g. TED Talk), only hearing the audio; any actions by the speaker were therefore not seen by the interpreter. Working in an interpreting booth in an otherwise empty classroom, the interpreter had no visible audience present. Two minutes of each video of an interpreting session were analyzed for speech disfluencies and functions of accompanying gestures by a team of three researchers, with cross-checking by another team, with discussion and resolution of all cases of disagreement.

Only 3% of the 4027 gestures produced during disfluencies were representational or deictic in function. While the interpreter is the animator and author of their gestures, the principal of these gestures could be the interpreter either based on their own thinking for speaking, or on the imagined (mentally simulated; Marghetis & Bergen, 2014) production of the original speaker being heard. The ambiguity reflects the laminated nature of interpreters in their task as speakers (Goodwin & Goodwin, 2004).

However, 39% of the gestures were pragmatic in function, involving presenting a stance, e.g. with a palm-up open hand. Here, the lamination may break apart, such that the gesture may more clearly reflect the interpreters' own stance on the content being interpreted (e.g. shrugging while interpreting a phrase), rather than that of the imagined speaker being heard.

In the interpreters' frequent use of self-adapters (41%) (e.g. rubbing one's own fingers with hands folded on the desk), the lamination breaks apart further, as these are less plausibly a rendition of what the original speaker giving a TED Talk might have done; they appear to serve the interpreters' own purposes of cognitive focussing (Freedman, 1972), making the interpreter the principal of these movements.

We see that interpreters are laminated speakers in more ways than just in their use of speech (Vranjes & Brône, 2021). There are varying degrees of differentiation as to whose stance and authorial footing they are expressing bodily. We will consider how further research on this phenomenon could contribute to the modeling of cognitive processes involved in thinking for interpreting.

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Affective stance-taking in mediatised political speeches of "Bündnis 90 / Die Grünen" (The German 'Green Party')

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Keywords: Multimodality, mediatized political debates, affective stancetaking

Based on the ongoing DFG/NCN research project "Multimodal Stancetaking: Expressive Movement and Affective Stance" (http://mmstance.home.amu.edu.pl/), this talk takes a closer look on the specific *affective stancetaking in political speeches as multimodal actions*. Multimodality is addressed in a double sense: First, as the dynamic interplay of hand and body gestures with the spoken utterance. And secondly, it includes the media-specific contexts in which the political speeches are embedded, concerning the audiovisual orchestration of camerawork, shots, montage and sound. Both levels of multimodality form an inseparable unit that unfolds temporally as *expressive movement* in the moment of perception (Kappelhoff & Müller 2011). Affectivity unfolds as movement quality and rhythm of expressive movements and in this way mobilizes affective stance in the perception of the viewer. It is the goal of this talk to illustrate this approach with analyses of two speeches given by members of the German party "Bündnis 90 / Die Grünen": a parliamentary speech delivered in person in the German Bundestag in 2019 and a speech made at the national congress of the Green Party in 2020, held digitally.

The speeches under scrutiny are 16:13 Min (parliament speech 2019) and 4:20 Min (party congress 2020) long. They are official video recordings from the German Bundestag and the Green Party and were free for download on the official websites. Transcribed, annotated and analyzed were only the areas of the speeches that showed high affective engagement, in total around 3-3:30 Min unfolding within four expressive movement units (EMU) per speech. These EMUs were analyzed with the *expressive movement analysis* developed by Kappelhoff and Müller (2011; Müller 2019; Müller & Kappelhoff 2018) and as far as multimodal utterances are concerned the analysis draws on Müller's *Methods of Gesture Analysis* (Müller 2010; Müller & Kappelhoff 2018; Müller in press). The analysis of stance-taking on the semantic level is based on the approach by Du Bois (2007).

The analyses of the two speeches illustrate that a systematic consideration of the audiovisual orchestration of mediatized political speeches not only broadens the perspective on media-specific contexts of forms of multimodal stancetaking, but shows that and how the form of affective stancetaking changes with them. The face-to-face parliament speech unfolds as a live interaction between *audience and speaker*, where the reactions of the audience affect and shape the speech and thus stance-taking can be conceived as interactive and multimodal. The digital party congress speech, on the other side, lacks this immediate interactive feedback and in its place, we find a *cinematic staging of affective stancetaking*. It is concluded that it is the unfolding of media specific dynamics that shapes multimodal affective stance taking.

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Taking an affective stance: How affectivity is mobilized in mediatised political debates.

Cornelia Müller (European University Viadrina, Frankfurt (Oder))

Despite a rich and diverse literature on stance and stancetaking (Du Bois 2007; Englebretson 2007; Dancygier 2012), the role of gesture, posture, and prosody, as aspects of this communicative activity remains only scarcely studied. Moreover, stancetaking often becomes a vibrant *multimodal* activity when people are highly engaged affectively. This is the starting point for the argument presented in this talk and of an ongoing DFG/NCN research project (http://mmstance.home.amu.edu.pl/). Extending previous work on 'expressive movement' as a key concept for the analysis of multimodal phenomena (in face-to-face interaction and in audiovisual composition) multimodal stancetaking is considered as dynamic *interaffective* process (Kappelhoff & Müller 2011; Müller 2019; Müller & Kappelhoff 2018). Drawing on analyses of political debates in the German Bundestag, it will be illustrated how the concept of 'expressive movement' serves as an analytical tool to capture affective stance taking as a dynamic, multidimensional and multimodal movement gestalt displaying characteristic *affective profiles*. The talk concludes on the specific media-aesthetic dimension of taking an affective stance in mediatised political debates – and suggests how affectivity is mobilized in audio-visual broadcasts of political debates.

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The body's stance on stance

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Keywords: multimodal constructions, stance-taking, fixed expressions, language-in-interaction

The cognitive linguistic (CL) analysis of stance-taking has finally come into its own after decades of being subsumed under investigations into subjectivity and intersubjectivity in language (Verhagen 2005; Davidse, Vandelanotte, & Cuyckens 2010; Dancygier & Sweetser 2012), which were not always focused on speech within face-to-face interaction, but rather on issues of viewpoint and alignment in discourse. Englebretson's (2007) edited volume and DuBois's paper (2007) in particular, shifted the attention squarely to the expression of stance—the epistemic/attitudinal/emotional in language—which already enjoyed a long tradition in largely text-based and non-CL corpus linguistic research (Biber & Finegan 1988, 1989; Biber et al. 1999; Precht 2000; Haddington 2006). With the recent added interest in CL on multimodality in interaction, a growing literature is emerging that investigates gesture, gaze, and other co-speech behaviours such as shifts in posture, head, or facial expression that accompany expressions of stance-taking during face-to-face interaction (McClave 2000; Streeck 2009; Debras & Cienki 2012; Debras 2013; Schoonjans et al. 2013; Schoonjans 2014; Jehoul et al. 2017). Researchers are discovering certain co-speech embodiments such as eyebrow-raising, shoulder shrugs, mouth shrugs, or head nods that accompany general expressions of stance categories such as (DIS)AFFILIATION, DOUBT, CERTAINTY, INDIFFERENCE, and so on.

Our research (Hinnell & Rice 2017, 2018, 2019, 2022; Rice & Hinnell 2015, 2017) has followed this line of inquiry, but has taken it a step further. We have been documenting highly conventionalized co-speech embodiments that accompany certain fixed expressions in English that convey a particular stance profile. Using a range of video sources, from YouTube to the Red Hen multimedia archive (Steen & Turner 2013; Joo et al. 2017), we illustrate just how much of stance-taking is realized in the body, with the corporeal stance signal on par with speech and prosody. Indeed, we have hypothesized that a weak body partitioning is at play when it comes to co-speech embodiments, such that the more subjective or "stancy" an utterance is, the more likely it will involve the upper body, while the more objective or propositional the content, the more likely that manual gestures will prevail.

In this talk, we survey our recent research that examines the incidence and nature of co-speech embodiments with a variety of fixed expressions of stance in English interaction. Sample stance categories with expressions that are reliably and recurrently multimodal include: ATTITUDINAL INDIFFERENCE or CONCESSION (*what can I say?*), EPISTEMIC UNCERTAINTY (*I don't get it)* or IMPRECISION *(or something like that*), AFFILIATION with a prior utterance (*which is true*), DISAFFILIATION with a prior utterance (*sure, sure*). The striking and frequent pairings between particular stanced expressions and particular embodiments lead us to support the mounting call in cognitive linguistic circles that the construction, as the primary unit of linguistic analysis, needs to be conceptualized holistically as a "composite utterance" (Enfield 2013) or as a multimodal entity, with verbal, prosodic, and kinesic form accompanying the particular stance and pragmatic meanings that inhere (Cienki 2015; Zima & Brône 2015; Zima & Bergs 2017). This presentation represents a contribution towards inventorying the English multimodal "constructicon".

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Stance-taking mouth actions in Quebec Sign Language (LSQ)

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Keywords: sign language, stance, mouth actions, perspective

Subjectivity has been identified as the phenomenon where a person expresses their stance within a spoken discourse (Benveniste, 1966; Lyons, 1977). With a stance, the stance-taker's evaluation of an object or a situation is relayed, without the need of an explicit explanation, to the interlocutor within a social public act (Du Bois, 2007). Stance-taking occurs when the speaker evaluates an object (or notion) and positions himself on a scale (epistemic, affective or appreciation) in relation to this. Furthermore, he communicates this stance with the interlocutor through the act of alignment, coordinating and modeling the minds of interlocutors through socio-communicative acts (Feyaerts, 2013, 212-214). Stance-taking has been discussed for signed languages, notably for ASL, through the use of signed modal verbs, emphasis and facial articulators (Janzen et al., 2011). Mouth actions are identified as having various functions within signed discourse: morphological, enacting (where the signer enacts the character's mouth), lexical and pragmatic (Crasborn et al., 2008; Dubuisson et al., 1999).

In this study we are interested in identifying stance-taking mouth actions within Quebec Sign Language (LSQ) and how these are manifested within a signed discourse where a signer can present his stance during the discourse. The dataset for this study consists of 12 LSQ discourses produced by three Deaf LSQ signers as part of elicitation tasks based on four video stimuli of non-verbal events derived from 2 different scenarios. For each scenario two different videos are shown based on two different modes, descriptive and narrative; the former includes slow and menial tasks, and the latter more expressive and lively actions produced by actors. These discourses, providing 89 minutes of material, are analyzed with the following variables: forms of mouth actions, type of stance presented, and presence or absence of the participant's point of view (where the signer assumes the character's perspective within the discourse).

In this dataset, 34 stance-taking mouth actions were identified having two distinct types on an affective scale: doubtful and humorous. Only 6 doubtful stance-taking mouth actions were identified and the form for all tokens was that of downturned lips. 28 humorous stance-taking mouth actions were identified, with the following forms: lightly opened lips allowing air to blow through, pursed lips, raised upper lip, open-mouthed, stretched lips and downturned lips. We note that the act of smiling, when present, is not necessarily restricted to the lips, but can also be expressed through raised cheeks accompanied by slightly squinted eyes. In fact, this form is present for all humorous stance-taking mouth actions and absent for all doubtful mouth actions. Furthermore, of the 34 identified stance-taking mouth actions, 33 were produced during instances of enactment (the assumption of the characters' perspective during signing). This raises the interesting observation that a signer can narrate an event from the character's perspective, thus assuming the attitude and actions of this character, while simultaneously producing a stance-taking mouth action to inform the interlocutor of their own position in relation to the signed and enacted event in LSQ.

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Complex stances in ASL narratives: Intersubjective stance-building from past and present spaces.

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Keywords: Narratives, Intersubjectivity, Stance marking, ASL, Past space, Present space

The complexity of stance-taking is explored in American Sign Language (ASL) narratives when the signer builds an overall stance with evaluative stance markers within the past narrative expressed by story characters, along with those in the utterances of the narrator in the present intended for the addressee(s). Our questions are:

1) Do characteristics of stance-marking within the past narrative (on the part of story characters) and those of stance-marking in the present (e.g., evaluative comments about past story events) differ? If so, in what ways?
2) Do past-oriented and present-oriented stance markers work together to intersubjectively build a resulting "stacked" stance (Dancygier 2012) shared between storyteller and addressee?

Data for this study come from two conversational ASL corpora: conversations of ASL-signing dyads recorded in both the US and Canada in 2005 (Shaffer), and a conversational corpus recorded in Canada in 2000 (Janzen). In this study we focus on narrative passages that emerged spontaneously in the conversations.

Janzen (2019) notes that in ASL narratives, past and present spaces overlap in many ways, for example through body partitioning (Dudis 2004) a signer may relate a past event and while maintaining one hand's positioning in space, look at the hands/space from the perspective of the narrator and comment on it by signing with the other hand or with facial gestures (or both). By this we understand that elements of past and present spaces can be simultaneously represented.

This study, then, explores the ways that past stances of story characters and present stances of narrators are expressed, and whether there are differences in their expression. To do this, we look at spatial and body positioning, the spaces where signs are directed, and the direction of eye gaze. For example, it appears that for story characters, stance-marking signs can be directed toward other entities positioned around the shared space but never toward the addressee, with eye gaze patterning in a similar way. However, stance-markers originating with the (present) narrator can be directed toward these same positions *or* toward the addressee, with eye gaze more often toward the addressee.

A complicating factor, however, is that there may be ambiguity regarding whether the stance expressed is that of a past story character or present narrator. In one example, a signer tells of being shocked by seeing someone in handcuffs and ankle shackles, escorted by prison guards in a hospital emergency room. It is unclear whether the stance expression 'oh f*ck!' was actually signed (or thought) by the character, or whether it is a present-time choice made by the narrator and imposed on the character, which would suggest that this element of the story is a present construal of the event and not a factual re-telling.

Finally, we explore cases where multiple stance expressions exist and how they "stack" to create an overall stance that is more than a single stance expression can achieve. Results show that narrators may at times "plant" stances in enacted story characters' discourse that are intended intersubjectively for the present-time addressee.

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Non-affiliative stance-taking in storytelling activities

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Keywords: stance-taking, multimodality, multimodal constructions, disaffiliation

This paper deals with multimodal displays of non-affiliative stances and assessments in German face-to-face storytelling activities. It is based on recordings of conversations between well-acquainted participants. To allow for fine-grained multimodal analysis these conversations were filmed from an external perspective and in addition, all participants wore mobile eye tracking glasses during the entire interaction.

Building on research that has highlighted the co-constructed nature of storytelling activities (Lerner 1996, Schegloff 1997) and the intersubjective nature of stance-taking (Du Bois 2007, 2014), this paper takes a multimodal perspective and focusses on how interactants use language, prosody, gaze, and gestures to express stances that are non-affiliative to different degrees. The paper addresses two main issues: We first concentrate on the ways that non-affiliative assessments and stances are communicated as multimodal packages. This includes both verbal and nonverbal strategies to highlight disaffiliation. Second, we focus on the face work that storytellers and recipients jointly do to mitigate these displays of disaffiliation.

We will first focus on the (con-)structional side of non- or disaffiliative stance taking and show that disaffiliation is usually projected by turn-initial pre-beginning elements (Schegloff 1996: 92–103) such as *ja (yes), ja aber (yes but)* und *ja gut (yes well), joa (yeah)* as well as *ja (ich) weiß (yes, I don't know*). These constructions are accompanied by gaze aversion and in some cases also by a short lateral nod, suggesting that all these semiotic resources are associated with each other by convention. The thus may qualify as multimodal stance-taking constructions (Zima & Bergs 2017). If the subsequent disaffiliative utterance is further realized with high pitch, it is treated as an interruption or turn-competitive incoming (French & Local 1983) and hence as particular problematic and in need of repair. Speakers thus react to these disaffiliative incomings by either giving way and pausing their own turn or by competing for the turn space. This competition is usually marked by speeding up, raising pitch and gaze aversion (Zima, Weiß & Brône 2018) from the incoming participants.

We further show that although the combination of different semiotic resources to express disaffiliation is common, disaffiliation can also be communicated by recipients' reluctance to give (sufficient) feedback and/or take a stance. As Stivers (2008) has argued, this particularly concerns nods at sequence closings, which are not accompanied by any other forms of verbal or non-verbal feedback. By its focus on multimodal stance-taking in storytelling activities, the paper ties in with both the recently growing interest in the multimodal nature of stance-taking as well as recent pleas to revisit interactional storytelling from a multimodal perspective (König & Oloff 2018, Zima & Weiß 2020). It further contributes to the ongoing discussion on the potential multimodality of constructions (Zima & Bergs 2017, Schoonjans 2018).

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New perspectives on communicative efficiency

Convenors:

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Iconicity, frequency, or efficiency?

A related-event approach to causality in Japanese complex predicates

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Keywords: Japanese complex predicates, iconicity vs. frequency, efficiency, causality, causal inference

Whether iconicity or frequency drives coding asymmetries, such as the formal difference between the singular *apple* and plural *apples*, is a topic of ongoing debate (Croft 2008; Devylder 2018; Haiman 2008; Haspelmath 2008a, 2008b, 2021). This corpus study investigates the underlying cause of coding asymmetries by analyzing two forms of Japanese complex predicates: V-V compound verbs (e.g., *toke-otiru* (melt-fall) 'melt and fall'; *osi-akeru* (push-open) 'push open') and V-*te* V complex predicates (e.g., *kaet-te neru* (return-TE sleep) 'go back to sleep'; *yai-te taberu* (grill-TE eat) 'grill something and eat it'). Specifically, this study focused on the concept of "causality" and explored how conceptually different complex predicates (two events that are causally related and two events that are not) differ in their token frequency.

To identify the causal relationship of V-V and V-*te* V, this study proposed an original "related-event approach," which focuses on understanding the nature of verbs by examining their "related events" (see Chen 2013; Chen & Matsumoto 2018), such as causes and purposes. Expressions such as complex sentences were used to examine the causal relationship between the two verbs that constitute a compound predicate (Table 1). Causality here includes direct (cause-result and means-purpose) and shared causality (common cause and common purpose). The causal relationships were identified using the Japanese Web 2011 corpus with the Sketch Engine. The token frequency of each complex predicate was determined using the Balanced Corpus of Contemporary Written Japanese (BCCWJ) with the Chunagon web interface program to guarantee the precision of frequency-based studies. The complex predicates under scrutiny were randomly selected from 3,757 V-V in a web-based database (http://csd.ninjal.ac.jp/comp/index.php) and 6,580 V-*te* V collected from BCCWJ, each with 100 instances.

The results show that 1) the formally simpler/shorter V-V is significantly more causal than V-*te* V; 2) V-V is significantly more frequent than V-*te* V; 3) complex predicates that are causally related are significantly more frequent than those that are not. This study further employed a Python library for causal reasoning (CausalNex) to generate a directed acyclic graph (DAG; see Zheng et al. 2018) of three variables (causality, formal complexity, and frequency) for investigating the direction of motivation (Figure 1).

The findings contradict Haspelmath's frequency theory, as frequency is not found to be the cause of coding asymmetry. Regarding iconicity, the correlation between form and concept is spurious due to the confounding factor of "efficiency." According to Levshina (2022), language users spend less effort and time on highly accessible information. Research has shown that information with a causal relationship is more likely to be remembered than without one (Myers et al. 1987). From a communicative efficiency perspective, this suggests that events in a causal relationship are more easily accessible, resulting in their expression in shorter, less costly forms (Figure 2).

In conclusion, by considering motivational directionality, this study suggests that the motivation for coding asymmetry is efficiency. The frequency of usage is a result rather than a driving force, and iconicity can be caused by efficiency (although there are iconic linguistic phenomena that cannot be explained by efficiency; see Chen 2020, in press). The related-event approach presented in this study provides a novel method of examining the characteristics of verbs and their relationships, thereby creating a new area of linguistic analysis centered on "high-resolution event relationships."

Keywords	Examples
V *to* V	*kogoeru to sinu* (freeze then die) 'die from freezing'
N *ni* V	*itami ni nai-ta* (pain DAT cry-PST) 'cried from pain'
N *de* V	*syokku de nai-ta* (shock in cry-PST) 'cried in shock'
V *tame ni* V	*sagasu tame ni mawaru* (search PURP go.around) 'go around to search'

Table. 1: Keywords for searching causes and purposes (V is the verb to be investigated).

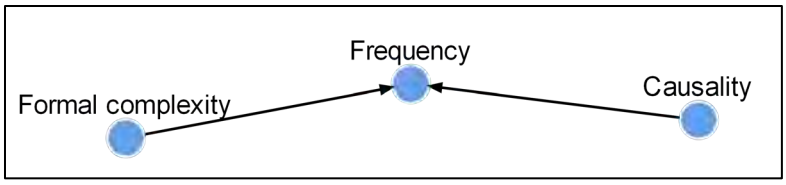

Fig.1: DAG of formal complexity, causality, and frequency (arrows represent direct causal effect).

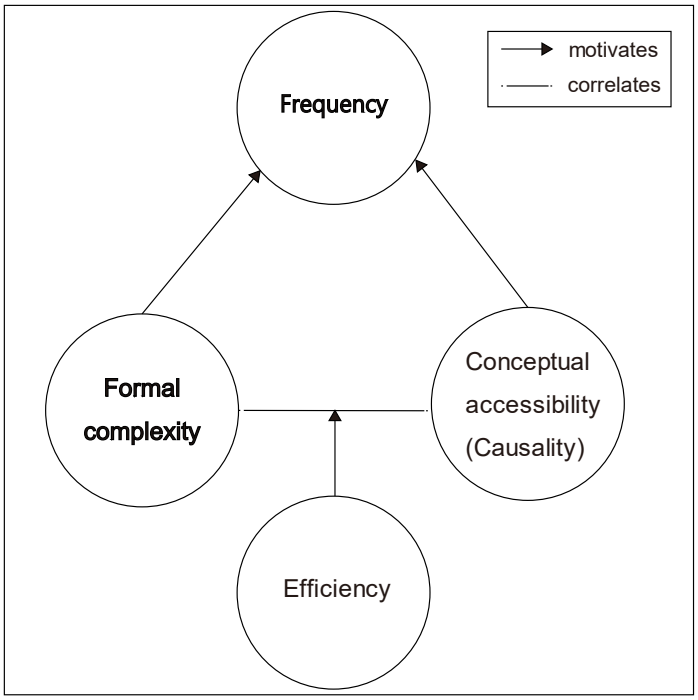

Fig. 2: The relationship between formal complexity, conceptual accessibility, and frequency.

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Working memory constraints: Implications for efficient coding of messages

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Keywords: communicative efficiency, working memory, trade-offs, cross-linguistic correlations

This paper starts from the assumption that in an effective and economic communication system the information should be distributed as uniformly as possible over time, and the average level of information transmitted per time should be adapted to our cognitive capacity limits (Fenk & Fenk 1980). Here, I focus on the limited cognitive resource ”working memory“ and its implications for communicative efficiency. Working memory is supposed to be limited in the number of items (Miller's 1956 “magic number 7 ± 2”, or Cowan's 2001 “magical number 4 ± 1”) as well as in terms of duration, e.g., Baddeley's (1986) phonological loop model (subjects can recall as much as they can rehearse in 1.5 – 2.0 sec.).

An earlier study (Fenk-Oczlon 1983) tested the hypothesis that language has adapted to memory limitations and that the number of syllables per simple declarative sentence encoding one proposition will cross-linguistically vary within the range of Miller's magic number 7 ± 2. It shows that the 61 languages investigated so far (Fenk-Oczlon & Pilz 2021) indeed use on average 7.1 syllables to express a matched set of 22 simple declarative sentences, but the individual languages show a considerable variation in the number of syllables, ranging from 4.64 syllables in Thai up to 10.95 in Telugu. We assumed that syllable complexity might be the decisive factor for this variation and found a strong inverse relationship between clauses length in number of syllables and syllable length in number of phonemes. Concerning Cowan's magical number 4 ± 1, it reveals that languages use on average 3.7 words per clause, ranging from 2.6 in Turkish up to 5.4 in Mandarin. Moreover, a significant negative correlation was found between the number of words per clause and the number of syllables per word. Memory constraints in terms of duration (Baddeley's 1.5 - 2 sec) show in the trade-off between number of syllables per sentence and number of phonemes per syllable: a mean of 10 simple CV syllables like in Japanese or 5 complex syllables like in Thai corresponds to about 1.5 – 2 seconds.

Thus: All relevant working memory constraints discussed in the literature, show in the length of simple declarative sentences expressing one proposition (cf. Fenk-Oczlon & Fenk 2001). Moreover, time limits (Baddeley's 1.5 - 2 sec) force trade-offs between number and length of relevant units.

A time span of 1.0 – 2.0 seconds for producing a proposition is also observed in sign languages (Bellugi & Fisher 1972). As to memory limitations in number of items, Malaia and Wilbur (2019) report a lower memory span with signers (5 ± 2) than with speakers (7 ± 2). This discrepancy is often explained that signs take longer to produce than words. “the same store, bigger unit explanation” (Gozzi et al. 2011:106) is supported by our findings from spoken languages: Languages with longer words tend to have a lower number of words per memory span.

Efficient communication is achieved when language users have minimal effort to successfully send and receive messages (Gibson et al. 2019, Levshina 2022). Our data suggest that minimal effort and efficient communication is achieved when clauses, dependency distances (cf. Liu 2008, Gomez-Rodriguez et al. 2022), etc., do not exceed working memory limitations. The findings are discussed within the framework of Systemic Typology (Fenk-Oczlon & Fenk 1999) arguing, for instance, that memory constraints and the trade-offs found also influence word order in spoken and sign languages.

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What the conventions of grammars tell us about communicative efficiency: Some current issues and prospects

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Keywords: Grammatical conventions, left-right asymmetries, Maximize On-line Processing, Uniform Information Distribution, Prediction

Many early ideas about communicative efficiency were inspired by grammatical patterns across languages. Greenberg (1966) proposed morphological hierarchies such as Singular > Plural > Dual > Paucal for number marking on nouns, and Nominative > Accusative > Dative > Other for case marking, based on the cross-linguistic distribution of these morphemes and on patterns of allomorphy (with richer morphological variants and more zero expression at the top end of these hierarchies). In order to explain these patterns in grammars he pointed to correlations with (declining) frequencies of usage within languages (e.g. Singular nouns in a corpus of Sanskrit = 70.3%, Plural = 25.1%, Dual = 4.6%), and these performance-grammar correspondences then led to efficiency principles such as Minimize Forms in Hawkins (2004, 2014). Greenberg's (1963) word order universals and his proposed correlations between head orderings in grammars (e.g. VO languages prefer Prepositions before NP, OV languages prefer NP before Postpositions, cf. Dryer 1992) inspired the processing principles of Minimize Domains (Hawkins 2004, 2014) and Dependency Length Minimization (Futrell et al. 2015), both of which were formulated in terms of the relative efficiencies of competing word order selections within languages as measured in usage corpora. Keenan & Comrie's (1977) Accessibility Hierarchy for relative clauses across grammars also contributed to, and has been explained in terms of, Minimize Domains.

The present paper points to some lessons that cross-linguistic grammatical patterns can teach us today for issues in efficiency research. In particular, there are numerous "left-right asymmetries" that compete with Greenberg's largely symmetrical (VO vs OV) patterns, and these have been relatively neglected in the literature but were captured in the Maximize On-line Processing principle of Hawkins (2004, 2014). Grammars provide evidence for a preferred "front loading" of information in a sentence (i.e. get as much information to the hearer as quickly as possible). This is seen particularly clearly whenever one linguistic category is strongly dependent on another, like a gap on a moved filler, or an anaphor on its antecedent, or a narrow-scope quantifier on a wide-scope one, or a predication on a topic. The informationally richer category either invariably or at least generally precedes the dependent one in these cases. Similarly, rich verb agreement patterns (whereby the verb has inflectional agreement with two or more arguments) is particularly favored in languages in which the verb occurs early in the clause, and rich case marking (for inflectional marking on nouns that differentiates between several cases) is favored in languages in which nouns occur early and the verb is final (SOV). These grammatical data suggest that early positioning in language usage is favored not so much for categories that predict what lies ahead (so reducing surprisal, cf. Levy 2008), but for those that are rich in explicit content and to which subsequent categories need access for full and immediate processing. These data also provide a large class of exceptions to the claim that information density is systematically uniform throughout a clause (Jaeger 2010). These exceptions involving the front loading of information in grammatical conventions are exemplified and quantified using cross-linguistic data from typological samples including the World Atlas of Language Structures (Dryer & Haspelmath 2013). They should now be heeded and their lessons for efficiency in language usage should be tested on usage corpora and in experiments.

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Human languages trade off complexity against efficiency

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Keywords: language complexity, language efficiency, information theory, quantitative typology, quantitative linguistics

A central goal of linguistics is to understand the diverse ways in which human language can be organized (Gibson et al. 2019; Lupyan & Dale 2016). In our contribution, we present results of a large scale cross-linguistic analysis of the statistical structure of written language. To this end, we have trained a language model on more than 6,500 different documents as represented in 41 parallel/multilingual corpora consisting of ~3.5 billion words or ~9.0 billion characters and covering 2,069 different languages that are spoken as a native language by more than 90% of the world population or ~46% of all languages that have a standardized written representation. Figure 1 shows that our database covers a large variety of different text types, e.g. religious texts, legalese texts, subtitles for various movies and talks, newspaper texts, web crawls, Wikipedia articles, or translated example sentences from a free collaborative online database. Furthermore, we use word frequency information from the Crúbadán project that aims at creating text corpora for a large number of (especially under-resourced) languages (Scannell 2007). We statistically infer the entropy rate of each language model as an information-theoretic index of (un)predictability/complexity (Schürmann & Grassberger 1996; Takahira, Tanaka-Ishii & Dębowski 2016). Equipped with this database and information-theoretic estimation framework, we first evaluate the so-called 'equi-complexity hypothesis', the idea that all languages are equally complex (Sampson 2009). We compare complexity rankings across corpora and show that a language that tends to be more complex than another language in one corpus also tends to be more complex in another corpus. This constitutes evidence against the equi-complexity hypothesis from an information-theoretic perspective. We then present, discuss and evaluate evidence for a complexity-efficiency trade-off that unexpectedly emerged when we analysed our database: high-entropy languages tend to need fewer symbols to encode messages and vice versa. Given that, from an information theoretic point of view, the message length quantifies efficiency – the shorter the encoded message the higher the efficiency (Gibson et al. 2019) – this indicates that human languages trade off efficiency against complexity. More explicitly, a higher average amount of choice/uncertainty per produced/received symbol is compensated by a shorter average message length. Finally, we present results that could point toward the idea that the absolute amount of information in parallel texts is invariant across different languages.

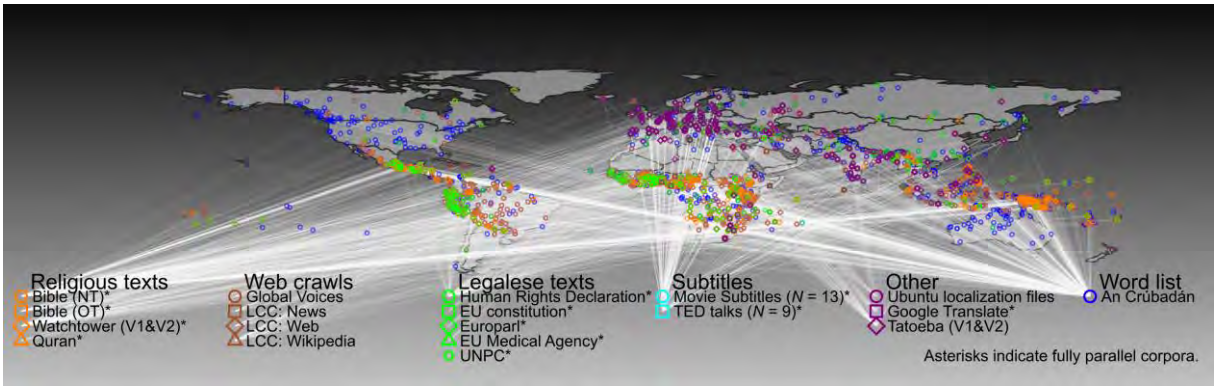

Fig. 1: Collected corpora and their geographical distribution.

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Redundancy in nominal plural marking

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Keywords: redundancy, typology, corpus linguistics

Linguistic analysis often departs from the idea that language users try to communicate efficiently, finding a balance between expressivity, clearness, and robustness of their message on the one hand, and conciseness, economy, and transparency on the other. Instances of redundancy, common in all languages, are therefore usually explained by pointing at speakers' desire to be clear and understood. A question that has long been overlooked in research into communicative efficiency is whether languages differ in the extent to which they allow for redundancy. Leufkens (2020) finds that there are cross-linguistic differences in the occurrence of different types of concord, suggesting that some grammars are more lenient towards redundancy than others. However, the fact that a grammar allows for redundant expression of information does not entail that users of that grammar make use of that option. This leads to the following research question: are there cross-linguistic differences in the degree to which language users avoid or employ redundancy?

Plural concord The RQ is answered by means of a multi-method case study into plural concord: the phenomenon where nominal plural marking is combined with a >1 numeral, resulting in the redundant expression of plurality. In some languages, the nominal plural marker is optional in such a context. For example, in (1), the Turkish plural suffix *-lAr* is omitted in the presence of the numeral (Göksel & Kerslake 2005:148).

(1) üç çocuk
3 child
'three children'

Corpus study First, I will present a corpus study in which I explore whether three languages vary in the extent to which they allow redundant plural marking. The three languages, Estonian, Hungarian, and Turkish, all exhibit optional plural concord. Comparable texts in the three languages are selected from corpora annotated according to the Universal Dependencies framework[1]. The proportion of redundantly marked plural nouns in the total set of numeral-noun constructions is measured per text, per corpus and per language. Appropriate statistical tests will show whether there are significant cross-linguistic differences in the amount of redundancy in languages with the same grammatical set-up.

Interviews As a follow-up on the corpus study, speakers of Estonian, Hungarian and Turkish are asked for their reasons to either omit or express plurality. Thus, it will be investigated to what extent redundancy is consciously avoided or deliberately employed, and, again, whether there are cross-linguistic differences in this respect.

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Communicative efficiency and language contact

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Keywords: Communicative efficiency, language contact, multilingualism, convergence, divergence

Research on communicative efficiency has produced a significant amount of evidence of the cost-effective organisation of discourse and grammar (e.g., Gibson et al. 2019; Levshina & Moran 2021; Trott & Bergen 2022). However, less research exists on efficiency in the context of bilingualism, and it may not be obvious what predictions to make in that context. Here we discuss efficiency predictions in the context of language contact and present preliminary typological results from a pilot study.

Contact literature assumes by default that bilingualism leads to linguistic convergence (e.g., Filipovíc & Hawkins 2018). Convergence may be related to learnability and efficiency at least in the following way (e.g., Ploog 2017). Typological distance between languages is known to cause higher cognitive costs in language learning for the bilingual individual, such as longer learning times (e.g., Cysouw 2013). Increased linguistic similarity may decrease such costs, and thus efficiency. For instance, experimental literature on lexical activation suggests that lexical similarity in related languages (aka cognate facilitation) may – in the right circumstances – increase the likelihood of bilinguals selecting for doppels, words that have the same meaning and form in the learned languages (e.g. *photo* in English; *foto* in Dutch; Ellison & Miceli 2017).

Besides convergence bilingual communication may lead to divergence (or stability). In the literature, social factors are frequently given as causes of divergence, such as maintaining group identity (e.g., Braunmüller et al. 2014; Giles 2016; Tamaredo 2022). However, divergence may be motivated by cognitive factors as well. Evidence from research on translators (Malkiel 2009) and from experimental research on language monitoring in bilinguals (Ellison & Miceli 2017) suggests that these individuals select against doppels. More specifically, when a bilingual needs to use only one language, blocking words in the non-target language is communicatively efficient, but it also leads to divergence. In terms of linguistic structure, the effect of monitoring may be weaker, however.

Here we present a typological approach for researching linguistic outcomes in bilingual ecologies to understand how much of those outcomes could be explained by efficiency. In this approach languages are sampled in sets of three: the Focus Language (FL), the language of interest; the Neighbour Language (NL), which has been in contact with the FL and is the potential source of contact effects in it; and a Benchmark Language (BL), a close relative of the FL. With these sets we evaluate the likelihood that the FL has converged to the NL or diverged from both the BL and the NL. We discuss how this approach can be used for measuring the probability for convergence and divergence by turning controlled counts for similarities and dissimilarities into probability distributions via the beta distribution and sampling from them via Markov chain Monte Carlo sampling. A pilot analysis of 38 Focus languages suggests that the probabilities of structural divergence (.44) and convergence (.45) are about the same. We argue that the convergences may be linked to increased efficiency in bilingual communication, while other factors are needed to explain the divergences as well.

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Communicative efficiency in sign languages: the role of the visual modality-specific properties

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Keywords: sign language, communicative efficiency, language evolution, iconicity, simultaneity

Research on communicative efficiency, so far, has been systematically studied in spoken languages, which are characterized by their linear structure and predominantly arbitrary form (Levshina, 2022). However, sign languages are expressed entirely in the visual modality which gives raise to the modality-specific properties: simultaneity and iconicity. In this talk, we propose a new perspective on communicative efficiency by shifting the focus from spoken to sign languages. We present a series of recent studies, which provide experimental evidence for the central role of the visual modality-specific properties in communicative efficiency in sign languages.

Dependency distance minimization is a principle used for communicative efficiency by placing related words closer together in a sentence (Gibson et al., 2019). However, in sign languages, the distance between related elements can be minimized not only linearly, as is done in speech, but also simultaneously. Signers can use multiple body articulators (hands, torso, head, eye gaze, facial expression) to encode multiple event elements at the same time (Dudis, 2004; Veermerbergen et al., 2007). Furthermore, signers can use iconicity, i.e., motivated form-meaning mappings (Perniss et al., 2010; Taub, 2001), to depict event elements and establish a motivated relationship between them to form a single construction (Figure 1). Thus, signers can use simultaneous and iconic constructions to cluster related event elements closer together to achieve communicative efficiency. In three experimental studies, we showed that simultaneous and iconic constructions evolve and are actually used for communicative efficiency (Slonimska et al., 2020, 2021, 2022).

In all three studies, we used an experimental design in which we systematically increased the informational density (number of semantic information units) of events asked to be described in a director-matcher task. First, we collected data from 23 deaf Italian adult signers of LIS. Results revealed that when signers faced increasing informational demands, they increased simultaneity in their encodings (Slonimska et al., 2020). Next, we investigated the data in regard to the linguistic strategies used and we found that as the information in the events increased, so did the use of highly iconic depicting strategies (Slonimska et al., 2021). Finally, we collected data from 23 Italian hearing adults who did not know any sign language but were asked to use only their gestures to communicate (i.e., silent gesture paradigm). We predicted that if simultaneous and iconic constructions have evolved within a linguistic system for communicative efficiency, then signers should use more simultaneous and iconic constructions compared to hearing adult participants using silent gestures. Results showed that signers used these constructions more and in more flexible ways than non-signers (Slonimska et al., 2022).

Taken together, these findings constitute first experimental evidence that the modality in which language is expressed influences how communicative efficiency can be achieved. We show that signers take advantage of the visual modality-specific properties to be communicatively efficient and that these properties evolve in a linguistic system for this function. As such, we propose a new avenue for future research to broaden our understanding of communicative efficiency through a lens of a multimodal view of language.

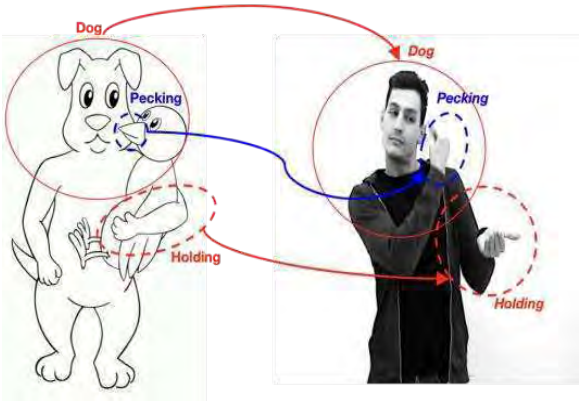

Fig. 1: An example of a signer using simultaneous and iconic construction depicting a dog holding a bird while the bird is pecking the cheek of the dog.

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Gesturing to be understood: Hearing speaker create manual symbol that benefits comprehension

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Keywords: silent gesture, communicative efficiency, langauge creation

There has been accumulating evidence showing that human communication is optimized for communication (Gibson et al., 2019; Goldberg & Ferreira, 2022). This evidence indicated that human language evolves into a way so as to facilitate easy, rapid and robust communication (Conway et al., 2020; Hahn & Xu, 2022; Piantadosi et al., 2011) , and language user actively adapt language use to maximize the rate of communicative success while minimizing the effort (Mahowald et al., 2013; Rubio-Fernandez et al., n.d.). However, it remains unclear whether communicative efficiency play a role in the process of language creation. Does communicative efficiency influence individuals' choices when they creating a novel communication system?

To answer this question, we focus on the rudimentary communication system created in manual modality – silent gesture. Silent gesture is gesture-based communication system created by hearing speakers when communicating exclusively in manual modality. Building upon iconicity, gesturers manage to communicate via silent gesture without pre-established form-meaning mapping by employing iconic signs in various ways. Previous cross-linguistic studies have demonstrated systematic iconicity in silent gesture (Hwang et al., 2017; Marentette et al., 2016; Ortega & Özyürek, 2020; van Nispen et al., 2017). To express a given concept, gesturers reliably employed the specific gesture with a subtype of iconicity (e.g., gesturers prefer to use a gesture which pantomiming eating an apple than any other gesture form when depicting an apple). The mechanism that underlies the observed systematic iconicity remains unclear. The presents study focuses on communicative efficiency as a factor that determines which subtype of iconicity is employed. We propose that individuals select the subtype that can maximize the probability of being understood.

In experiment 1, we ask whether hearing speakers are more likely to produce silent gesture that maximize meaning recoverability. 39 adult English native speakers were asked to produce gestures for a total of 67 concepts about manipulable objects. For the gestures depicting each concept, we identified the dominant gesture (i.e., the most frequently used gesture which produced by more than 50% of participants) and the non-dominant gesture (i.e., the second frequently used gesture). The dominant and non-dominant gesture forms for each concept that elicited dominant gesture were then shown to 97 comprehenders. Comprehenders were asked to provide their best guess for the meaning of each gesture. To measure the communicative efficiency of a gesture form, we used the Shannon entropy, which measured the informativeness of the gesture form (i.e., how consistent interpretations are across comprehenders), and the semantic relatedness, which represented the average semantic distance between the interpretations and the target word for the gesture. The results showed that comprehenders were more likely to provide consistent interpretations and semantically related interpretations to the target word when interpreting a dominant gesture than a non-dominant gesture.

In experiment 2, we ask whether hearing speakers who produce non-dominant gesture overestimate the communicative value of non-dominant gesture. 70 adult English native speakers were asked to produce gestures for the same set of concepts in experiment 1. After the production phase, they were asked to estimate the communicative value of the gesture forms produced for the target concepts in experiment 1. Result of experiment 2 indicate hearing speakers tend to rate the communicative value of a gesture form they have produced in the production phase higher compared to the hearing speakers who didn't produce the gesture form. Taken together, our result indicates communicative efficiency play a role in governing individuals' choice when they are creating novel communication system.

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Pushing Everyone's Buttons: Cognitive Methods in Political Discourse Analysis

Convenors: Laura A. Janda & Tore Nesset

Cognitive Methods in Political Discourse Analysis'': Identifying political orientation among Czech media classes using Market Basket Analysis

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Keywords: discourse framing, association, conceptual network, online media, Czech

Political language is one of the areas that is extensively discussed in cognitive linguistics (Lakoff 2004, Lakoff and Wehling 2012). This pilot study uses a set of quantitative tools with an aim to capture conceptual networks in two classes of Czech media portals that are presumably different in political orientation: the mainstream and anti-system media classes. We first identify keywords (Scott 2002) shared by both media classes; these are the words that are prominent in the online media of a specific period (measured against the background of the traditional periodicals) and are used as "seed words". We then examine how the seed words are interconnected differently in the two media classes: we apply Market Basket Analysis (Cvrček and Fidler 2022) to 10 media portals from each media class and examine how different keywords cluster around the same seed words in the two media classes. This information will be used to characterize the portals using Hierarchical Cluster Analysis (HCA) and multi-dimensional scaling.

Our earlier studies based on the data from 2020 (Cvrček and Fidler and Fidler and Cvrček, forthcoming) show striking differences between the mainstream and anti-system media classes. For example, the seed keyword "coronavirus" points to different conceptual networks within the mainstream and anti-system media classes. In both media classes, the keyword co-occurs with concepts related to the West, Russia, health threats, and human needs, but the anti-system media class uniquely co-occurs with concepts related to military and security-threats and violence, Ukraine, and Bill Gates. By zooming in on the texts where these keywords co-occur, we found that the anti-system media class, unlike the mainstream, connects COVID-19 to geopolitical threats by the West and conspiracy theory by "globalists". Similarly, while the word "racism" is not associated with any prominent concepts in the mainstream media class, it co-occurs with concepts related to the West and military and security-threats, violence, and the white population in the anti-system media class. Texts where these keywords co-occur suggest narratives that connect racism to violence and disarray in the West (thereby representing the West negatively), and to victimization of the white population.

The results of this probe are expected to substantiate the existing media class typology (mainstream vs. anti-system) by Šlerka (2018). Šlerka groups media portals into several clusters in terms of the similarity of their readers, more precisely, their online behavioral patterns, such as visits to web sites (based on Alexa Rank https://www.alexa.com/) and sharing and liking social media articles (based on the CrowdTangle service). The clustering based on audience overlap therefore does not stem from linguistic characteristics, topic preferences, or political stance of the media portals. Market Basket Analysis tests Šlerka's typology from a cognitive angle by comparing worldviews based on the network of associations in different media portals. Moreover, the pilot study could lead to a fine-grained differentiation among the media portals within one and the same media class. The current method has the potential to unpack ideological undercurrent within political texts in texts beyond the Czech media portals.

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Putin makes his case

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Keywords: Russian, grammatical case, Keymorph Analysis, Keyword Analysis, discourse

Putin has banned the use of the word 'war' to refer to the conflict in Ukraine. While such a choice of words is deliberate and conscious, grammatical categories and their meanings are obligatory. The Russian language requires all nouns to represent one of six grammatical cases every time they are used. The meanings of the grammatical cases in Russian have previously been described in the framework of cognitive linguistics, revealing radial categories structured by means of metaphor and metonymy (Janda & Clancy 2002). We build on this description with a methodological innovation, Keymorph Analysis (cf. Cvrček & Fidler 2019), an extension of Keyword Analysis (Scott & Tribble 2006; Baker 2006) to focus on the distribution of grammatical morphology. This first application of Keymorph Analysis to Russian data measures deviations from corpus norms in Putin's use of grammatical case. Our target texts are the twenty-nine speeches officially pronounced by Putin between the launch of Russia's "largest military exercise since the Cold War" on 10.02.2022 (Walker 2022: 27) and the height of the first phase of invasion on 03.03.2022 (Walker 2022: 39). Our reference corpus is Russian InterCorp (Rajnochová et al. 2021), chosen because of its varied composition and UD tagging crucial to Keymorph Analysis.

We target Putin's portrayal of *Rossija* 'Russia', *Ukraina* 'Ukraine', and *NATO* 'NATO' through the lens of grammatical case, quantified as "DIN*" (an adaptation of difference index). DIN* uses relative frequencies to represent the proportion of a given inflected wordform in relation to all occurrences of the lemma in the target text and reference corpus respectively. For each of the three nouns, Putin's usage presents strong deviations from the zero line in the middle of Figure 1, which is what one might expect based on a corpus.

Through grammatical case Putin depicts Russia as a humanized (Dative), agentive actor (Nominative) and a reliable partner for collaboration (Instrumental), but also as the victim of unfair geopolitical maneuvers. Ukraine is presented as relatively static and backgrounded, a territorial location (Locative). NATO is the label for an untrustworthy organization, a mere destination for Ukraine (Accusative).

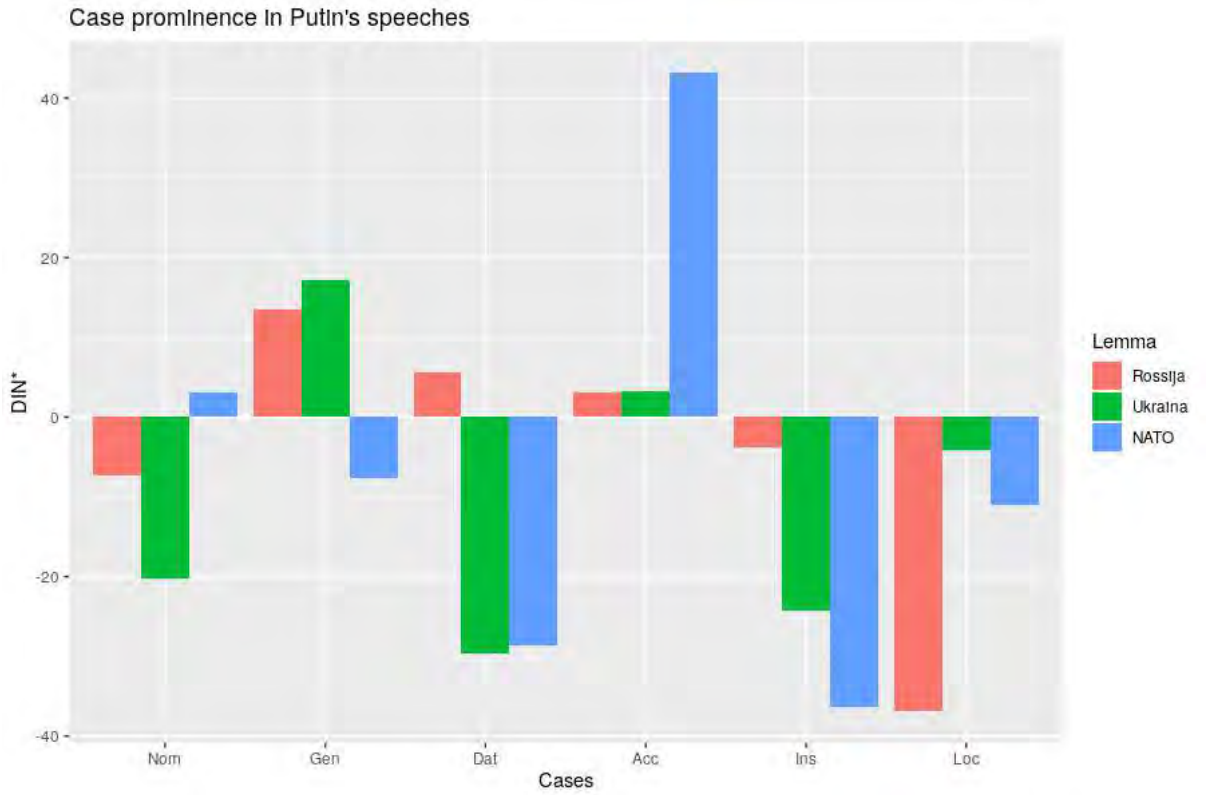

Fig. 1: Visualization of DIN values of the use of grammatical case in Putin's speeches for the words Rossija 'Russia', Ukraina 'Ukraine', and NATO 'NATO'*

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A Politician's Speech Echoed in Computer-Mediated Communication of his Supporters

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The presentation advances the studies of the receiving end of political communication by addressing the question whether a politician's statements affect the discourse of his followers. This premise is often assumed to be true, but studies empirically validating it are not very numerous. US ex-president Trump is famous for prejudiced and discriminatory speeches (Rubin Wilson, 2021) which are believed to influence his supporters. To check this assumption, I examine a large (over 2.3 million words) corpus of online conversations devoted to one of Trump's controversial statements. The UltraViolet Bleach (UVB) corpus was collected in May 2020, and it consists of readers' comment sections after online articles devoted to Trump's suggestion to treat COVID-19 with disinfectants and UV light (Knoblock Malkin, 2020). Trump's words prompted heated debates: readers discussed Trump himself, his words, facts and events mentioned in the articles, and they also engaged in insults, flaming, and trolling.

The corpus was analyzed with the help of corpus-assisted discourse studies methodology (Baker et al., 2008). To reveal the level of "echoing" of Trump's words in the discourse of his supporters, I used the Sketch Engine corpus-management system (Kilgarriff at al., 2004) and identified key words and clusters, studied frequency lists of words and phrases (n-grams), and examined concordance lines containing them. To check the commenters' political leaning in cases where it was not clear, I referred to the comment files looking for other comments by the same person to see if any of them provided clearer clues.

The results contradicted the expectations since Trump's words were mostly repeated by his opponents rather than by his supporters. Direct quotes of his statement were indeed the most frequently repeated phrases. For example, Trump's question "Is there a way we can do something like that, by injection inside or almost a cleaning?" was quoted over 1,300 times in the corpus. However, most of the quotes came from anti-Trump commenters who adopted the strategy of copying and pasting chunks of the briefing's transcript. It was their reaction to the numerous pro-Trump comments to the effect that he never said what he said or that his words were taken out of context. It appears that the willingness of a politician's fans to adopt elements of his discourse and/or repeat specific words and phrases depends on the nature of what is said. The presentation will include examples of most frequently quoted words and phrases, reasons they were included, and reactions by pro-Trump commenters to the quotes, and it will discuss the complexity of the interaction between a politician's speech and the speech of his audience.

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The linguistics of threats: a cognitive approach to political discourse.

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Keywords: Russian, threat, political discourse

In times of political tension and conflict, 'threat' figures prominently in political discourse. In the speeches of the Russian president, the west is consistently portrayed as a threat to Russia (Janda et al. 2022). But what does 'threat' mean in Russian? How are threats expressed? Has the concept changed over time? We present three case studies that explore these questions using state-of-the-art methods from cognitive and corpus linguistics. We show that 'threat' can be represented as complex radial categories that undergo considerable change over time. We furthermore demonstrate that Russian uses different strategies to describe and carry out threats.

Case study 1 explores the nouns *groza* and *ugroza*, both of which can be used in the meaning 'threat'. Our analysis of corpus data from 1800 to 2020 indicates that the two words share a radial category network of submeanings that are connected via metaphorical and metonymic links. However, the two nouns have different centers of gravity in the network, and their distribution has changed over time. In present-day Russian, *groza* is dominant in the meaning 'thunderstorm', while *ugroza* describes a wide variety of threats. Our analysis furthermore reveals a diachronic development whereby origins of 'threat' change from denoting concrete physical threats to more generalized dangers, such as nuclear and environmental disasters, diseases, and terrorism, while entities affected by these threats undergo a change from concrete persons via communities and states to the entire planet.

Case study 2 focuses on two near-synonymous verbs for 'threaten': *grozit'* and *grozit'sja*. Thorough analysis of data from two different corpora involving semantic vectors and collocations enables us to tease apart the meanings of the two verbs. We demonstrate that they collocate with different parts of speech and tend to occur in different syntactic constructions. *Grozit'sja* is typically used about interactions between two persons, while *grozit'* has a wide range of metaphorical uses, a tendency that has become more expressed over time.

Case study 3 addresses constructions that are used to carry out threats. Analysis of data from the Russian Constructicon, a digital resource with about 2200 constructions, shows that while Russian has a variety of constructions to perform threats, none of them involve the words discussed in case studies 1-2. We propose a typology of threat constructions involving two participants and three semantic components but show that typically one or more participants or components are not expressed overtly. The constructions are part of a complex semantic neighborhood involving fourteen semantic types of constructions that are connected via lateral and vertical constructional relationships.

Taken together, our three case studies testify to the value of combining classic analytical tools from cognitive linguistics (e.g., radial category, metaphor, metonymy) with digital resources like the Russian Constructicon and methods from contemporary corpus linguistics (e.g., semantic vectors and collocations). The multi-faceted approach we advocate enables us to sharpen our understanding of important concepts in political discourse, such as 'threat'.

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Market Basket Analysis: What do Russian media say about Svalbard?

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Keywords: Russian, discourse, media, Market Basket Analysis, Svalbard

Market Basket Analysis (MBA) is a data-mining technique that can be used to facilitate corpus-assisted discourse analysis. Analysis of keywords (KWs) – prominent words typical for a text that are considered as indicators of the content and style of a text (Scott & Tribble 2006: 55), is a starting point in many corpus-based discourse analyses (Cvrček & Fidler 2022). However, interpretation of isolated KWs is often an issue for large data analysis. MBA helps to overcome this issue by providing a wider context for KWs within the discourse by revealing associative links between KWs occurring in different texts of a corpus (Cvrček & Fidler 2022). This principle may be consistent with Langacker's (2008: 464) point that linguistic meaning is not limited by "what is overtly expressed" but instead it is "largely supplied by context". Associative links revealed by MBA can also be interpreted as patterns of associations between concepts in the discourse (Cvrček & Fidler 2022).

MBA is used in the present study which investigates how the Svalbard archipelago (Spitsbergen) has been covered in Russian media. Svalbard is an Arctic Archipelago with a unique legal status, provided by the Svalbard Treaty of 1920, which recognizes the sovereignty of Norway over Svalbard and gives equal rights to other countries, including Russia, to conduct economic activity there.

The present study covers a number of Russian mainstream media outlets and investigates articles published between 2010 and 2021. Within the present study, MBA is seen as a tool to investigate the array of associations for the keyword *Spitsbergen* and to understand what the data is about in terms of discourse themes.

One of the revealed prominent themes is the Russian economic presence in Svalbard. In this context, Svalbard is often portrayed as a place where the Russian activities are seriously restricted. The restrictions are seen as a breach by Norway of the Svalbard Treaty. This context is framed as a conflict and even as a war in which Russia is trying to restore justice. The beginning of the Ukrainian crisis in 2014 leads to additional misunderstandings in the interpretation of the Svalbard Treaty. Now these disagreements also concern visiting Svalbard. After 2018, Svalbard has been reported in the context of the growing militarization of the region, which causes concern on the Russian side.

Within analysis of "instances of language in all their complexity and specifity" referred to by Langacker (2008: 457) as usage events that comprise a discourse, MBA is proving to be an effective method, specifically in the context of political and media discourses. MBA restricts extensive textual data to those containing associative networks of discourse concepts and thus helps to explore the salient features of discourse in a relatively short time.

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Modeling Figuration in Climate Change Cartoons

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Keywords: Climate denier, Conceptual metaphor, Conceptual metonymy, Figurative imagery, Global warming

Editorial cartoons are a rhetorical genre of text and image in political discourse within an argumentative perspective functioning to shape attitudes. As such, they contribute to political discourse regarding climate change in that they "represent an important visual addition to the cultural repertoire that shapes how climate change is and can be represented" (Nielsen & Ravn, 2021: 146). Yet effective argumentation is difficult in a polarized world in which (i) people feel entitled to their own "facts" and see "climate change" from a purely ideological perspective, (ii) entrenched interests related to fossil fuels wield financial and political power, and (iii) people naturally resist thinking about hard problems with technical solutions, to name just a few reasons. To overcome this resistance, cartoonists, in their own words, attest to using humor, irony, satire, absurdity, and pictures as tools, select metaphors attuned to their readerships, and seek to engage the opposition to expose the folly of arguments against the scientific facts – and existential threat – of global warming (Toles and Kallaugher in Politics and Prose, 2016).

Those who resist confronting the scientific evidence of a global warming threat rely on various strategies, among them, contradiction, downplaying the danger, declaring unforeseen benefits, blaming/discrediting the messenger, making false equivalences, and so on, all of which can be represented pictorially and appear in climate change cartoons. The present investigation, extending previous work analyzing linguistic texts alongside pictorial representations (Panther, 2005; Panther & Thornburg, 2012), undertakes to apply the methods of cognitive linguistics to identify the pictorial and verbal representations of the attitudes and ways of thinking of so-called "climate deniers" in order to better understand not only why and how people engage in irrational thinking, but also how cartoonists represent and counter argumentative positions in the climate debate. To shed light on this human behavior as illustrated in climate change cartoons selected from the internet, we model the figuration in the imagery and text in terms of VEHICLES, i.e. conceptually speaking, SOURCE domains and TARGET domains, metaphorical mappings and metonymic associations, various cultural models and scenarios, including folk models of animals, action (vs. talk), speech acts, and pragmatic inferencing.

In questioning why people accept anti-science thinking, Kenrick et al. (2022) cite group-think and trust of known sources, confirmation bias, and social goals such as the desire to win status and conform to the views of a social network (even to win a mate); nevertheless, they believe within-group conformity may be broken down with a single counter-view such that scientific knowledge is spread to the public, made available for debate, and perhaps provoke positive action. The genre of the often humorous pictorial and verbally brief editorial cartoon repeatedly expressing satirical "good-natured ridicule" (Toles, 2016) makes it a potent tool for political persuasion, the inner workings of which cognitive linguists can shed some light on.

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Grammatical and multimodal patterns of compression in political discourse

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Keywords: Blending, Compression, Constructions, Conceptual Integration

Human cognition has the astonishing ability to range far outside local scale, across causation, agency, time, and space. Human beings can think about past and future political structure and action at global scale, taking place over decades or millennia, involving thousands or millions of agents, and extending across vast causal networks. *Compression* makes such thinking possible: it creates human-tractable blended conceptions giving congenial access to otherwise intractably complex conceptual networks (Turner, 2014; Fauconnier & Turner, 2002; McCubbins & Turner, 2013; Turner, 2019). This talk considers conceptual, grammatical, and multimodal patterns for compression in political thinking, especially when it focuses on energy. The forms of compression examined in this talk are all cases in which the conceptual integration network contains some human-scale meaning that provides tight, intelligible structure to the blend and thus makes it tractable. There are many such patterns. Here are four:

1. In image-schematic compression, a vast conceptual network contains a simple image-schema or blend of image-schemas. In such cases, the blended space in the network relies heavily on the image-schema. Examples include the blend of the planet Earth with a single coronavirus-19 particle ("it's going global," cover of *The Economist* for March 2020). Percentages blend vast conceptual networks with *linear scales* that additionally use 0 and 100 as polar cognitive reference points, and a partition into equal constituent line segments. Political thinking and discourse often rely on compression to percentages (e.g. political discourse about the future impact of the war in Ukraine on European imports of Russian goods often used percentages, as will be discussed, but that compression to percentages was often flawed and misleading). Journey (source-path-goal) compressions are also very common: *crossroads*, *fork in the road*, . . .

2. In force-dynamic compression, a vast conceptual network contains a simple force-dynamic structure, or a relatively simple blend of force-dynamic structures, and the blended space in the network relies heavily on the tractable force-dynamic structure. Examples include *tipping point*, *choppy waters*, *jujitsu defense*, etc.

3. Mechanical compression often uses both image-schematic and force-dynamic compression. Examples: an *indefatigable well-oiled machine*.

4. In sensation compression, ranges of the complex network are blended with a particular somatic loop to give an immediately tractable compression. Examples include *taste of victory*, *sting of defeat*, etc.

There are many patterns of compression in political thought and discourse besides these four. This talk will pick just two to focus on: (1) Blending the future with a "cone of uncertainty," including multiple interacting cones of uncertainty (Langacker, 2008, p. 300). The center of the cone, as its radius increases, is seen as most likely, with less probable futures lying further from that center. (2) Blending a vast conceptual network with a single agent, especially in discussing energy (e.g. Reddy Kilowatt) and climate (e.g. a polluted natural landscape as a plaintive spirit).

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The conceptualization and embodiment of list constructions across signed and spoken languages

Convenors: Laura Ruth-Hirrel & Sally Rice

Pattern of form and function of bodily resources in listing practices in Romance languages and beyond

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Keywords: lists, multimodality, gesture, interactional linguistics, culture, cognition

Lists are frequently used in spoken language as a discursive resource and can be considered as a universal, cross-lingual practice for structuring ideas (Couper-Kuhlen & Selting, 2018, online chapter F). As such, they have been given attention in several fields of linguistics, mainly in intonation research (e.g. Couper-Kuhlen 1986), conversation analysis and interactional linguistics (e.g. Jefferson 1990, Selting 2007). Yet, until date, the role of gestural and bodily expressions in the production of lists has received little attention in descriptions and analysis and will therefore be the focus of this presentation. Following the principles of Interactional Linguistics, the analysis pursues a qualitative, praxiological approach and draws its conclusions from a perspective on listing as a sedimented practice in Talk-in-Interaction. Specifically, we tackle two main aspects: firstly, the role of gestural and bodily resources in establishing the format and in organizing the interaction in general (Dankel & Satt 2019); secondly, the leeway for different solutions different cultures may have for the integration and interrelation of different modalities in the practice of listing as a recurrent communicative task (Dankel & Soto Rodríguez 2021).

The dataset we rely on contains 557 examples of list constructions in Spanish (221), French (276), Italian (20) and Quechua (40). It was compiled from a corpus of TV broadcasts (different interview situations and types as well as discussion rounds) and video clips (explanations and instructions) collected by the author and colleagues on freely accessible video platforms (unpublished), and from Freiburg Sofa Talks Corpus (Pfänder, Satti & Schumann, in prep.), which contains video recordings of collaborative storytellings from couples, friends or family members. Drawing on interactional linguistic methodology, the data was transcribed and interactional patterns were documented by a qualitative sequential analysis of the datapoints. The gestural and bodily movements were measured and visualized via motion tracking.

Regarding the first aspect, we argue that lists in Spanish, French and Italian are multimodal and that bodily resources play a major role in establishing lists but also organizing the task of collaborative listing. We show that gestures shape the production of lists with varying granularity at the levels of cognitive planning and interaction control. Yet, the most routinized gestures also lose these functions again. From these observations, we can draw conclusions on the integrated relationship between language, bodily resources, cognition and interaction control for meaningful communication in face-to-face interaction. For the second aspect, based on lists from Andean Spanish and Quechua, we explore whether culturally particular modifications to list making can be documented in the bodily and gestural patterns but also in the prosodic, verbal and discursive configuration of lists. Our results show that, whereas the main structural and functional properties are similar, there are differences, functionally (the use of lists in communicative practices) as well as structurally (in terms of a quite different interplay between syntax, prosody and gestures, especially regarding information structure). This leads us to discuss the flexibility of the multimodal list constructions to adapt both to local contingencies of interaction and to specific regional manifestations influenced by the communicative needs of the speakers.

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A study of list buoys in the production of two Libras signers.

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Keywords: List buoys, Libras, Variation

Liddell (2003) identified five types of ASL signs produced with the non-dominant hand. He called them buoys because, in general, they persevere in the signing space. Buoys have been attested not only in ASL, but also in other signed languages among which are Brazilian Sign Language, Finland-Swedish Sign Language, French Belgian Sign Language, German Sign Language, Norwegian Sign Language, Swedish Sign Language and Québec Sign Language. In this paper, we analyze one of the five types of buoys, the list buoy, which consists of using the fingers of the non-dominant hand to refer to different entities. Specifically, our goal is to compare the productions of list buoys as produced by two deaf signers from the Brazilian state of Paraná, a man and a woman, in terms of the taxonomy of list buoys as proposed by Heitkoetter & Xavier (2020). According to this taxonomy, list buoys can be (1) fixed, produced as a simultaneous presentation of the list-fingers; (2) sequentially-built, articulated by a sequential presentation of the list-fingers; or a (3) mix thereof. Each of this type, in turn, can be (4) perseverating, in which the list-hand is held in place throughout a stretch of discourse or (5) non-perseverating, in cases in which the list-hand alternates with other signs. Our data were collected from Youtube vídeos. The male signer's data comprise 60 list buoy productions identified in vídeos that total 1 hour and 57 minutes. The female signer's data comprehend 25 list buoys productions identified in vídeos totalling 1 hour and 31 minutes. All these data were annotated in Elan in terms of the list buoys categories as proposed by Heitkoetter & Xavier (2020). In addition, we also coded our data in relation to the finger at which the list buoy starts (thumb, índex or pinkie) and the type of movement the dominant hand produces when pointing to one of the fingers of the non-dominant hand (straight, circular or a mix thereof). The results show similarities and differences between the two signers. Among the similarities we can mention the occurrence of all types and subtypes of list buoys in the production of both the male and the female signer. In addition, similar frequencies were observed in some cases, for example, sequentially-built list buoys and straight movement are more frequent in the both signers' data. Among the differences we can cite the finger at which the signer starts the list buoy. Whereas both signers more frequently start at their index, we attested the thumb playing the same role only in the male's data and the pinkie only in the female's data.

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The semantics and pragmatics of gestured listing constructions in English

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Keywords: multimodal interaction, list constructions, recurrent gesture, multimodal construction

The multimodal expression of enumeration has not received sustained attention in the gesture literature, possibly because variation is extensive in how speakers count on their fingers or gesture while listing steps in a process, a set of options, or multiple examples of a category—whether that category is conceptually congruent or ad hoc. The high degree of variation in the visuo-spatial signal is matched by a high degree of variation in the linguistic signal, vis-à-vis factors such as the length of the list, the lexico-syntactic "weight" of listed items, whether all items are relatively on-par with respect to their level of specificity, and whether the list ends with an all-purpose "general extender", such as *and stuff like that* or *or whatever* (Overstreet & Yule 1997, 2021). Such variability in the speech signal may explain why listing expressions haven't been considered as candidate constructions in the cognitive linguistic literature either. Moreover, lists serve different functions in discourse and we must also consider the pragmatics of the context of use (cf. Aijmer 2002, Romero-Trillo 2015) to determine whether the list serves a more referential (informational) or discursive (intersubjective) function and the ramifications this difference has for co-speech listing gestures. The ubiquity of variation observed for enumeration and listing has perhaps occluded the fact that both co-speech/co-sign activities are ripe for investigation as recurrent gesture types (Ladewig 2014, Müller 2017) or even as multimodal constructions (Zima & Bergs 2017).

Our presentation surveys research we've conducted that examines the incidence and nature of co-speech embodiments with a variety of listing constructions in English. Using the multimedia Red Hen video archive (Steen & Turner 2013; Joo, Steen, & Turner 2017), we have analyzed the role of list length, listed item complexity, item specificity, presence of pragmatic markers, and incidence of turn completions in the context of particular listing constructions. In the Conversation Analysis literature, prominence is given to the three-part list, since it allegedly signals turn-completion, invites the interlocutor to help finish the list, or even spurs the speaker to complete the list by inserting a general extender (cf. Jefferson 1990; Lerner 1994; Shiffrin 1994; Overstreet & Yule 1987, 2021; Hinnell & Rice 2020, 2022; Rice & Hinnell 2022). See (1) and Figure 1 for an example of two different kinds of three-part lists and note the difference in co-speech gesture across the underscored listed items. However, in our corpus of hundreds of video clips from Red Hen containing lists with general extenders, we have found that the majority of such lists feature only two items; that is, one "listed" item and a general extender. Moreover, the lists we examined function less to exemplify items or options, but rather serve as parenthetical asides that the speaker hurries through in order to return to his or her main topic. The stance profile of lists is also dictated by the specific general extender that completes them. Overall, our findings suggest that gestured lists in English tend to be short and vague and carry more pragmatic force than semantic content.

Sample Data

(1) "Our Olympic athletes have come home to Canada! [applause]. That's right. Some came home yesterday. Many more are coming home today. Airports across this great land <u>to applause</u> [X], and <u>to hugs</u> [Y], and <u>to tears</u> [Z], and to probably <u>some weird touching</u> [X] <u>and some kissing</u> [Y] <u>and all that</u> [GE], ... is good."

Fig. 1. *Screen shots from a video clip containing two three-part lists without (X-Y-Z) and with (X-Y-GE) a general extender. The still shot coincides with the stroke at each listed item [see underscored text in (1)]. Note the different hand shapes and orientations between the lists in the top and the bottom rows and across the specific (X, Y) and non-specific (GE) items in the second row.*

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Partial Listing, etc.: The Case of the Japanese X *toka* Construction

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Keywords: List construction, exemplification, unexpectedness, topic-management, (inter)subjectification

The Japanese language has a series of partial-listing/exemplification constructions, X *toka* 'for example, X, etc.' being one of them (Teramura 1991; Barotto 2021; Taki 2021). The construction is often identified as having additional uses such as defocusing functions (e.g., approximation, hedging, and hearsay) marking 'X or something like that' as well as less commonly examined focusing functions (e.g., highlighting and unexpectedness) marking 'such a thing as X' and topic-managing function marking 'Like X, …' Using spontaneous conversational data consisting of approximately twenty hours of recording collected from various YouTube channels, this study qualitatively analyzes a family of constructions in which focusing and topic-managing X *toka* appears from a cognitive-pragmatic, functional perspective.

The analyses reveal that *X toka* marks new discourse topics in four ways:

(i) In topic narrowing, a topic (T) is narrowed from T1 to T2 (Ex1);
(ii) In topic shifting, a topic is shifted from T1 to T2 (Ex2). In some cases, it involves various types of contrastiveness which expresses addressee-oriented unexpectedness (i.e., T2 is different from, opposite of, or more noteworthy than T1, contrary to the addressee's expectation) (Ex3);
(iii) In topic recapturing, part of T1 is recaptured as T2 (Ex4). It can mark both speaker-oriented unexpectedness (i.e., The speaker expresses his surprise on X) (Ex5) and speaker- and addressee-oriented unexpectedness (i.e., The speaker expresses his surprise on X, and the speaker warns the addressee that his comment on X will surprise the addressee) (Ex6); and
(iv) In thetic marking, a topic is introduced to the addressee out of the blue, which involves addressee-oriented unexpectedness (Ex7).

The study suggests that *toka* functions to put X at the forefront of the addressee's attention (Talmy 2010), making it a discourse topic so as to talk about it further. It is argued that this function stems from the first of the two functions of partial listing: (i) to denominate salient examples and (ii) to evoke others in a category (Moravcsik 2017). Moreover, it reveals an intricate network of the discourse-pragmatic functions of the X *toka* construction that concern the speaker's own mind and the speaker's projection of addressee's mind, suggesting multiple layers of (inter)subjectification involved (Traugott 2003).

The current study contributes not only to our understanding of the X *toka* construction, but also of other partial-listing and related constructions, such as general extenders (Overstreet & Yule 2021) and the similative plural constructions (Daniel 2005) across languages. It also furthers the understanding of how various constructions such as partial listing, exemplification, topic, focus, contrastiveness, theticity, and unexpectedness, are related with one another and how (inter)subjectification plays a role in their relations.

Examples

(1) Speaker (S) is talking about how comediennes have their life together. S narrows down the topic to a comedienne, Bābī and comments on her.

bābī ***toka*** *mo meccha umai-shi ne. ryōri.*

'Bābī **toka**, she is also super good at cooking.'

(2) A group of friends is talking about the dialect of Tsuken Island and how it has many interesting expressions. Their friend, who is from Nago City on Okinawa Island, enters the room. S shifts the topic from the dialect of Tsuken Island to the dialect of Nago City and asks his friend about it.

nago ***toka*** *kekkō ōi n ja nai desu ka?*

'In Nago **toka**, there are quite a lot of expressions, aren't there?'

(3) S and his friend are catching fish. S's friend finds the larva of a dragonfly and is surprised at how big it is. S responds by mentioning *oniyanma no yago* 'larvae of *oniyanma* dragonflies.'

oniyanma no yago ***toka*** *motto dekai yo.*

'(You may not know it, but) the larvae of *oniyanma* dragonflies **toka**, they are much bigger.'

(4) S is talking about how his daughter used to do *yonaki* 'crying overnight.' S asks her if she remembers it.

tabun yonaki ***toka*** *oboete-nai de-sho?*

'Crying overnight **toka** (such an old incident), maybe you don't remember it, do you?'

(5) S and his family are eating takeout sushi. S's young daughter says she is going to eat *uni* 'sea urchin.' S is surprised.

uni ***toka*** *iku n ya.*

'Sea urchin **toka** (such an adult-tasting food), you are going to try it!? (I did not expect that).'

(6) S is doing a DIY project, and his friend is filming him. S is surprised that his friend is filming his *ossan no kewashī kao* 'old man's rough face' and expresses his opinion about this (I don't think anyone wants to see it'), which will be surprising to his friend.

daremo ossan no kewashī kao ***toka*** *mi-tak-unai to omou ze.*

'An old man's rough face **toka** (such a dirty thing), I don't think anyone wants to see it.'

(7) S, a comedian, learns that a food stand outside a supermarket is run by one of his fans, whom he calls *ata-oka* 'crazy people.' The stand has a special discount called *ata-oka waribiki* 'crazy-people discount' for the comedian's fans. To support the food stand, S tells a supermarket customer about the discount.

ata-oka waribiki ***toka*** *arun n da kedo...*

'There is a crazy-person discount **toka** (such an interesting thing), but…'

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Towards a typology of gestural enumeration strategies in English

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Keywords: gesture, listing constructions, multimodality

This study explores gestural practices that accompany verbal list constructions in face-to-face interactions in English. List constructions serve a variety of important functions in language. For example, lists contribute to discourse coherence (Schiffrin, 1994) and may be used to construe ad hoc categories in context (Barsalou, 1983; Mauri & Sansò, 2018). As acts of categorization rely on the basic cognitive operation of comparison (Croft & Cruse, 2004; Langacker, 1987), studying these situated acts are important for understanding the conceptualization of category structure. Recent research has also illustrated functional links between verbal lists and stance-taking in conversation (Hinnell & Rice, 2020; Kim, 2022). Most research on gesture and enumeration (i.e., lists) has looked exclusively at finger-counting practices (Bender & Beller, 2012). Only very recently have researchers begun considering how listing practices are embodied in the gestures that speakers produce with lists in discourse (Hinnell & Rice, 2020; 2022). No study to date has attempted to classify the range of gestural forms co-occurring with lists within or across languages.

The current project has two primary objectives. First, it aims to identify recurrent gestural strategies that English speakers produce with verbal lists. The second objective is to examine how gestural strategies interact with functional properties of lists. This includes examining affordances offered by different gestural strategies and analyzing how those strategies contribute to the dynamic conceptualization of meaning in specific usage events. Data for this study come from 50 televised broadcasts from various interactional genres, including talk show episodes, news interviews, and political debates. Broadcasts were exhaustively examined for verbal list constructions. We define list constructions as a set of elements in discourse construed as prosodically, formally, and functionally parallel (integrating definitions from Inbar, 2020 and Selting, 2007). Only tokens co-occurring with manual gestures were selected for analysis. Annotations were performed in ELAN. We coded for properties of the gestural expression (e.g., spatial location, use of fingers for enumeration, use of points, beat movements) and properties of the spoken lists (e.g., type of list, type of listed element, interactional function of list).

We found several formally distinct gestural strategies recurrently used with list constructions. These include digitally constructed lists (occurring with or without finger pointing), circular movements (cyclic gestures), sequential spatial movements, and beats (which sometimes combined with other strategies). Across strategies, speakers tended to iconically reflect the construed coherence of listed items by maintaining a consistent gesture form across elements in a single verbal list. Our analysis also suggests there are functional contrasts across enumeration strategies in terms of how they interact with functional properties, such as profiling, grounding, and stancetaking. For example, use of the digital strategy that includes finger pointing offers the affordance of profiling specific elements in the list and allows listed elements to be gesturally referred back to anaphorically (see Figure 1). Contrastively, continuous circular movement gestures co-occurring with lists are not well-suited to profile individual listed entities. We highlight differences in the affordances and interactional uses of different gestural enumeration strategies through fine-grained analysis of particular examples selected from the data.

Fig. 1: Example of a digital list with finger pointing and anaphora

(a) *relationships* (b) *causation* (c) *space*



(d) (e) (f)

We may have to understand those other two.

*Transcription: "We're dealing with **relationships** (frame a). We're dealing with **causation** (frame b). But what you're saying is that to understand space (frame c), **we may have to understand those other two** (frames d-f)."*

Description: The speaker first points to his index finger (touching it with his middle pointing finger) to profile the conceptual content evoked by the word "relationships." He then points to the middle finger (touching it with his middle pointing finger) to profile the conceptual content evoked by the word "causation." On his third point, he touches his pointing finger to his third/ring finger to profile the conceptual content evoked by the word "space." In frames d-f, he moves his pointing finger back and forth between the index and middle finger as he anaphorically refers back to the conceptual context previously evoked by "relationships" and "causation."

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The logic in the ordering of the entities in FinSSL

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Keywords: list construction, logic of ordering, Finland-Swedish Sign Language

In this presentation, I show how the users of Finland-Swedish Sign Language (FinSSL) use list constructions (Siltaloppi, 2023). List constructions are pointing constructions where the signer shows one to five fingers on one of their hands and points at these fingers with their other hand (Siltaloppi, 2023; Wilcox, Xavier & Siltaloppi, submitted; Wilcox & Occhino, 2016). In list constructions, the signers assign entities to these one to five fingers when they sign lists. In this presentation, I focus on the logic they have for the order of the entities for which they use list constructions and discuss examples where the order does not seem to follow the most obvious logic.

I analyze, why a signer breaks the chronological order of the listed events. For example, in one case in my data a signer gives a list of four events and three of the events are more similar to each other compared to the fourth, and this was the main reason for the order they were established to the list fingers. The chronological order of the events was not that relevant, and the signer listed the events one and two in the chronologically logical order, but the events three and four were listed chronologically incorrectly as the third would chronologically have been the last of these four events.

The data for this presentation comes from my research for my dissertation (Siltaloppi, 2023) and it consists of 48 informational monologues published on a web-tv channel called Teckeneko (www.teckeneko.fi) in 2014–2019. During those years, in total of 186 videos were published with 13 different signers. Of these, list construction occurs in 48 videos signed by 7 different signers.

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List Constructions in Two Signed Languages.

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Keywords: list constructions, signed languages, cognitive grammar

Lists help us to remember what to do and to organize our thoughts. Lists also play an important role in conversational interaction to structure discourse for the speaker and the audience. Lists occur in spoken, written, gestural, and signed modalities. Liddell (2003) introduced the concept of list buoys for signed languages, that is, a set of signs in which the non-dominant hand is held in a stationary configuration while the dominant hand continues producing signs. Liddell coined the term "buoy" based on an articulatory property — "they maintain a physical presence"; he noted that semantically, buoys "guide the discourse by serving as conceptual landmarks" (Liddell 2003, p. 223). Our analysis is grounded in previous research on pointing constructions in signed and spoken languages (Martínez & Wilcox 2019).

Our study focuses on two signed languages: Libras, the language of Brazilian deaf communities, and Finland-Swedish Sign Language (FinSSL), a endangered signed language used by approximately 90 native deaf signers in Finland and a smaller minority group in Sweden. The goal of our study is to apply a cognitive linguistic approach to the analysis of list buoys. We claim that these expressions are a type of pointing construction composed of two conventional linguistic components: a dominant hand pointing component and non-dominant hand finger locations, which we call the pointing device and the Place, respectively.

Data come from YouTube and Teckeneko videos and are analyzed within the theory of Cognitive Grammar. Whereas previous research only attributed linguistic status to the list hand and considered the dominant hand to be a pointing gesture, we analyze signed lists as constructions. List fingers are symbolic structures with referential meaning, and the dominant hand directs attention to the list finger referent.

We show that list constructions in Libras and FinSSL show striking similarities and some interesting differences, both when compared with each other and with the reports of list expressions in other signed languages. We also show that the typology of list constructions is more diverse than previously described. The list-hand in a list construction does not always remain stationary, and thus its function as a conceptual landmark is more complex than previously thought. In addition, we show that the list-hand itself is a symbolic structure that may be placed at meaningful spatial locations.

The dominant hand has not been given sufficient attention as a linguistic structure in previous research. The dominant hand, canonically an index finger, is also a symbolic structure that directs conceptual attention to the referent associated with a list-finger. Our approach shows that while its primary semantic function is to direct attention to list-hand referents, the dominant hand also creates a variety of higher-order entities or conceptual groupings.

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Pinkie First: List Constructions in Brazilian Portuguese Co-speech Gesture and Libras.

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Keywords: list constructions, gesture, signed languages

Lists play an important role in conversational interaction to structure discourse for the speaker and the audience (Jefferson 1990; Schiffrin 1994). Lists occur in spoken, written, gestural, and signed modalities. Liddell (2003) introduced the concept of list buoys for signed languages, that is, a set of signs in which the non-dominant hand is held in a stationary configuration while the dominant hand continues producing signs.

In this presentation we compare list constructions in Brazilian Sign Language (Libras) and in co-speech gestures of Brazilian Portuguese speakers. Data come from YouTube videos. We collected data using key phrases such as “four things people need to know” to identify videos with lists. The data were annotated in Elan based on analytic categories from the analysis of signed list buoys. Specifically, we coded our data for gestured list type based on the taxonomy of (Heitkoetter & Xavier 2020), according to which list buoys can be fixed (simultaneous presentation of the list-fingers); sequentially-built (sequential presentation of the list-fingers); perseverating (list-hand is held in place throughout a stretch of discourse); non-perseverating (list-hand alternates with other signs); and mixed (use of two or more types in a single list expression).

We find formal and semantic similarities in list constructions in co-speech gestures and in signing. Formally, we found cases of both sequential and mixed types. In cases that would appear to be fixed, the speaker often extends all five fingers at once but only uses one or two fingers to refer to list entities.

Among the differences, we find that modality affects the presentation of list. Whereas signers always produce two-handed lists in which the dominant hand directs attention by pointing to non-dominant hand list fingers, speakers produce one- or two-handed lists. In two-handed expressions, speakers point to, grab, or otherwise direction attention to the list fingers; in one-handed lists, speakers use other means to direct attention, such as intonation and gestural beats. A further finding is that Brazilian Portuguese speakers tend to prefer starting the list with the pinkie finger, whereas Libras signers generally prefer starting with the index. In Libras, palm-in orientation is considerably more common. For speakers, palm-up and palm-in are both frequent.

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Usage-based approaches to multilingualism

Convenors:

Antje Endesfelder Quick & Nikolas Koch

Contact phenomena in English-Estonian early bilingualism.

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Keywords: Early bilingualism, Code-switching, Usage-based approach, Estonian, English

The paper explores contact phenomena in the speech of an early (2;3-2;11) English-Estonian simultaneous bilingual from the usage based angle. In our view, there are no universal constraints on contact-induced language change, no strict border between lexicon and morphosyntax, and language is viewed as "an experience driven system" (Quick et al. 2019), so that grammar is shaped with usage and experience. The speaker's two languages constantly interact and influence each other. As one of the languages in the pair, Estonian, is rich in inflectional morphology, it provides an opportunity to glance into emerging bilingual grammar. So far there have been only a few studies on Estonian-English bilingual children's code-switching (see for example Vihman 2018).

The dataset contains a lot of code-mixed utterances (2,996 Estonian, 3,089 English and 2,744 code-mixed utterances), which thereby provides a good opportunity to study contact phenomena in early bilingual speech. The family follows a policy where on 3 days a week they all speak Estonian and on 4 days a week English. During the recording period the child did not attend daycare, so most of her input came from her immediate family. The utterances were categorized based on Muysken's (2013) typology. The data reveal that all three types of code-switching types (insertion, alternation, congruent lexicalization) are represented. We found that in utterances where Estonian is the base language Estonian inflections may be added to inserted English stems, but it is not always the case. The data also included English-dominant utterances with only one Estonian inflection (e.g. Where does that goe-ib? go-3SG). However, the analysis showed that predictions made by Muysken (2013) as to what type of code-switching is preferred under which sociolinguistic conditions and the role of structural differences between languages, do not seem to work. Estonian and English are typologically different, yet this does not prevent congruent lexicalization because the rules of two monolingual grammars are not necessarily maintained. We found that just as in adult Estonian-English bilingual speech compromise forms and bilingual constructions emerge (Verschik & Kask 2021). Some examples included compound verbs (e.g. kukkus off, which in Estonian would be kukkus ära and in English fell off.)

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Language mixing within an Albanian-German bilingual family network

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Language mixing is a common phenomenon in bilingual families. Bilinguals may mix their languages for various reasons, such as to convey a specific meaning, to suit the conversation partner or topic, or for psycholinguistic reasons. The mixing can take the form of alternation, where the language is completely changed within a conversation or utterance or insertion, where single words or phrases from one language are embedded in another language without changing the overall language of the utterance (see Muysken 2000). This study examines language mixing phenomena within an Albanian-German bilingual family network in Germany. The family is composed of 13 family members belonging to three different (language) generations. The language mixing behavior of the individual generations and the change in language behavior in cross-generational communication are of particular interest. To achieve the goal of this study a total of twelve hours of spontaneous language data, recorded within this family were analyzed. In addition, language biographical interviews with each family member in German and Albanian were conducted.

The following monolingual Albanian utterance from the corpus containing a German insertion, illustrates how the speaker uses the German word *Schultüte* to describe something that does not have a direct equivalent in Albanian. This type of language mixing is typical for the first generation.

Example (1)

do qanta qi i kom qi pi ruj per kujtim tfmive do: (.) ***schultüte*** *qaty i dava per tavan*

a few bags I keep as a reminder of the children some: (.) **paper cones** I put aside there for the attic

However, not all instances of language mixing are as clearly as the example above. In some cases, the switching between languages within an utterance is so frequent and varied that it becomes difficult to identify which language the statement is being made in. Additionally, the reasons for language mixing may not always be clear, like in the following example.

Example (2)

qitash e kum ni ***erst*** *(1.5) se* ***die vergeben keine kleinen baustellen mehr*** *a din pershemull* ***so kleine*** *asi nuk dojn gjithmon* ***im auftrag mit einer große*** *mja/* ***vergeben*** *a din:*

I just heard it now (1.5) that they don't award small construction sites anymore you know for example small projects they don't want always awarded on contract with a big you know

The manner of speaking exemplified in example (2) is characteristic of the second and third generation during conversations with the first generation. The aim is to investigate potential explanations for this language mixing phenomena in this specific conversational situation.

Recycling constructional patterns: The role of chunks in child code-mixing.

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Keywords: bilingual first language acquisition, code-mixing, computational methods

Language mixtures are often regarded as particularly creative utterances of children that cannot be attributed to the respective input (cf. De Houwer 2009: 44). In recent years these utterances have seen increased interest from a usage-based perspective. In usage-based approaches to monolingual acquisition, a number of methods have been developed that allow for detecting patterns from usage data. In this talk, we evaluate one of these methods with regard to its performance when applied to code-mixing (CM) data: the so-called Chunk-based-Learner (CBL) model (McCauley & Christiansen 2017, 2019). This method makes it possible to automatically detect patterns in speech data. In the process, the CBL focuses on chunking processes. However, unlike in most quantitative methods, chunks are not defined by fixed thresholds, but based on backward transitional probabilities (BTP). This method calculates how likely it is that a current word is preceded by the respective previous word. On this basis, chunks and chunk boundaries are determined in the utterances of a German-English bilingual boy. In addition, his input is also taken into account. A total of 228,221 utterances were included in the analysis, 3492 of which were CM utterances of the boy.

First results show that the patterns found in the CM utterances can largely be traced back to the input in the form of chunks. Here, about two-thirds (3,080 utterances) of the language boundaries within CM utterances coincide fully ([ein kleinen][shak]; 'a little shark') or partially ([I have][that werkzeug]; 'I have the tool') with chunk boundaries. In 426 CM utterances, there is no overlap between speech and chunk boundaries. These are often bilingual chunks such as [time out machen] ('take a timeout') or [ein anderer frog] ('another frog') which have no occurrences in the parental input but might be consolidated by the brother, who is a bilingual child himself. The question arises to what extent the extracted chunks in the boy's CM utterances can be attributed to input from his parents, his brother, or to his own utterances. Especially in the case of the bilingual chunks, we expect them to be consolidated not by his caregivers but by utterances of his brother or himself. Furthermore, we will test the hypothesis that the chunks that adhere to language boundaries can be attributed primarily to input from caregivers. In this context, the question arises whether these are also the chunks that occur frequently in the boy's monolingual utterances. The results and advantages and disadvantages of the method are discussed in the light of a usage-based approach (see also Koch et al. 2022).

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A Dynamic Network Approach to bilingual child data

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Keywords: Bilingual Language Acquisition, Patterns, Dynamic Network

Languages allow us to construct an astronomic variety of utterances by relying on a rather limited number of words. This compositional nature is one of the most remarkable features of language and has led some researchers to conclude that it would be impossible for children to learn a language by relying solely on basic cognitive mechanisms. However, usage-based paradigms have shown that children's early language is remarkably restricted and constructed around lexically specific frames; productivity gradually emerges in a piecemeal way showing an intimate relationship between linguistic knowledge and input (e.g. Tomasello 2003).

Most work on language acquisition has concentrated mainly on monolingual settings. However, most children actually grow up in a multilingual environment and often produce code-mixed utterances, cf. e.g. German-English utterances like *was ist dein picture* 'What is your picture' (Fion, 03;02.12). To systematically detect patterns in bilingual children and to relate them to the input they receive, we need to have a reliable data-driven approach. A number of such pattern detection approaches have already been proposed in the literature, e.g. traceback (Dąbrowska & Lieven 2005, Hartmann et al. 2021). A fairly recent addition to the repertoire of exploratory data-driven methods is Ibbotson et al.'s (2019) dynamic network model (DNM), which uses simple frequency measures to detect networks of co-occurring words (and part-of-speech tags) from the data. In particular, the DNM combines two measures: word frequencies and transition probabilities, gradually building up a network of patterns of use based on distributional information. This allows for identifying what Ibbotson et al. (2019) call "communities" in the data. In Ibbotson et al.'s (2019) original application of the method, it was applied to child-directed speech, showing that the emerging patterns cluster together to form clear "hubs", which in turn can be assumed to facilitate language acquisition. We argue that the same approach can also be used to investigate children's data, especially when dealing with code-mixed utterances.

As such, the aim of this paper is to model the "building blocks" of Fion' early language, a 2-to-3-year-old German-English bilingual child (n = 47,812 utterances). We want to detect patterns in his language use based on transitional probabilities as applied in a DNM (Ibbotson et al. 2019). Additionally, we want to relate those patterns to the child-directed speech he hears from their caregivers (n = 228,221 utterances). Finally, we want to investigate whether frequently co-occurring words are clustered together and are predictive of the child's code-mixed utterances.

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Language contact and the emergence of replica-constructions: Evidence from German heritage communities

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Keywords: Language contact, German heritage communities, possessive constructions

Multilingual communities in which speakers use more than one language on a daily basis offer a fascinating opportunity to observe the emergence of new constructions in a specific language system through contact-induced processes. In this context, constructions that emerge in different speech communities independently are of particular interest since they provide insights into more general processes of construction replication in multilingual settings (Matras 2020).

Against this background, this paper investigates the emergence of a particular construction in different multilingual communities with German as a heritage language, namely a new possessive construction. In some German heritage varieties in contact with English (or English and Afrikaans) such as Springbok German in South Africa (Franke 2008), Namibian German (Riehl 2014, Zimmer 2021a, 2021b), and Australian German (Clyne 2003) a possessive construction was identified that is composed of kinship-terms and possessive determiners (*mein* 'my'*, dein* 'your'), e.g. *mein Vaters Familie* ('my father's family). Zimmer (2021a) argues that the construction differs from similar genitive constructions in Standard German since there is no congruency between the possessive determiner and the clitic (or affix respectively). Furthermore, the type of serialization in Standard German is extremely marked and archaic (*meines Vaters Mutter* 'my father's mother'). These observations give rise to the assumption that the construction is contact-induced and emerges in these particular multilingual communities following universal cognitive mechanisms.

Following this assumption, I analyzed the emerging possessive constructions from a constructional grammar perspective in various contact settings with German as a heritage language: In all analyzed bilingual communities the construction is predominantly used with kinship terms and the possessum noun *Seite* ('side') (e.g., *von meiner Mutters Seite/meines Vaters Seite* 'von my mother's/my father's side'). I argue that this specific construction figures as a blueprint for the development of the new possessive constructions since all lexemes involved in the construction are cognates. In this vein, it will be demonstrated how the parallel activation of cognates in both language repertoires promotes the replication of the construction in the other-language context. In a next step, the further expansion of the construction type and its use in different contexts will be analyzed. Here, it becomes evident that the construction type is at different development stages in the respective communities. From a usage-based perspective, it will be illustrated how language dominance of the replica language promotes the frequency of the construction and its dispersion across speakers on the one hand, and the extension of contexts where the construction type can be used on the other hand.

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Egyptian Arabic-English Code-Switching in Egyptian female vlogs

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Keywords: code-switching, computer-mediated communication, bilingualism, multilingualism, diglossia, Egyptian Arabic, vlogs

Code-Switching as a result of language contact has been studied for a few decades already, however applying a usage-based method in this context is still considered a novelty. In this qualitative study concerning code-switching between Egyptian Arabic and English in Egyptian female vlogs, the video content from five different lifestyle bloggers was analysed with the help of usage-based method, combined with the typology of code-switching proposed by Muysken. The study was conducted as part of a PhD research in Linguistics, School of Humanities, at Tallinn University.

The material collected for this study has been published by the authors on YouTube in 2022. All the authors are young Egyptian women with proficiency in English. The study aimed to investigate their language choices while performing video blogs. Five hours - approximately one per author - were analysed and the fragments containing phenomena in question were transcribed manually for the analysis.

Vlogging, seen as a form of recorded performance, contains elements from spontaneous speech but most probably also carefully thought out phrases on a chosen topic. Because of earlier preparation, the language choices of the authors may not be as natural and spontaneous, as they would be in the case of an informal and not recorded conversation. Therefore, the results of this study may not resemble similar research outcomes on spontaneous speech or semi-structured interviews with informants within the same language pair. A comparison with studies previously done on this language pair but in different settings (not in a vlogging performance) may be attempted in order to show possibly different language choices in these settings.

The research focuses specifically on the Egyptian dialect of Arabic (Egyptian Colloquial Arabic, ECA), a dialect that evolves very quickly and has a history of Ottoman and English influences which have affected its contemporary shape. Therefore, the question of whether a word is an existing in the dialect borrowing or code-switching is not always to be answered easily here. The role of Modern Standard Arabic (MSA), being the official language of all Arab states, including Egypt, as well as the difference between MSA and ECA and its influence on the vloggers' speech is also one of the focus points in this study, seen as necessary to fully understand the phenomenon of multilingual speech of Egyptian vloggers.

Arabic and English being two typologically different languages, their merging may possibly result in new forms being a mix of stem from L1 and ending from L2. Whether this phenomenon happens or not and whether a successful production of such mixed forms using two typologically different languages is possible, is a question that this study aims to provide an extended answer to.

Preschool language assessment for multilingual children. A usage-based approach

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Keywords: second language acquisition, game-based assessment, spatial language domain

In this talk we present the implementation and evaluation of a game-based assessment tool designed for four- to six-year-old preschool children with German as first or second language (cf. Roche et al. 2016). Building on usage-based language acquisition theory (Tomasello 2003) the assessment is based on empirical findings of children's language production in authentic communicative settings (e.g., Behrens, Madlener & Skoruppa 2016). Thus, rather than assessing the use of sentences in isolation, it aims at evaluating children's productive communicative abilities in meaningful contexts relating to discourse structure and across different cognitive domains (space, possession, definiteness). To avoid traditional examiner-examinee test situations the core of the tool is an interactive app following the principles of Serious Games. The examinees play the game on a tablet by themselves while the examiner merely controls the child's tablet via a second device (Wizard-of-Oz Principle). Children are asked to help the game's characters (i.e., the children's interaction partner) by talking to them. Test items are embedded in communicatively relevant real-life situations applying a child-friendly background story. Furthermore, the app is supplemented by a system of data recording and data transfer to a server, data management, efficient procedures for transcribing the audio recordings and computer-based evaluation routines. The app is particularly suitable for use in daycare centers, as the implementation of the game itself takes little time and requires little training of the educators. This makes it easy to identify children who are at risk of learning difficulties later in school due to communicative delays.

The goals of our talk are (a) to show how Serious Games and insights into language development from a usage-based perspective can help to enhance the validity of preschool assessment for monolingual and multilingual children, and (b) to present the results of the app validation test (38 monolingual and 70 multilingual children aged 4;5-6;0) in the conceptually difficult domain of spatial language. In addition, we will discuss preliminary results from a study in daycare centers in Saarland. In this study, 100 preschool children are tested twice at 6-month intervals with the aim of comparing the language acquisition progress of two groups: one attending daycare centers with a special focus on language development and the other attending daycare centers without such a focus. Since the daycare centers with a special focus on enhancing language development follow a training concept integrated into everyday life, the tool we present is particularly well suited for this purpose with its orientation to everyday communication situations.

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Words and Meanings: Cross-linguistic variability and regularity in the lexicon

Convenors:
Elisabeth Norcliffe & Asifa Majid

Beyond words: Lower and upper bounds on the entropy of subword units in diverse languages

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Keywords: Information theory, language complexity, word meanings

Languages are diverse. At any level of structure, from phonemes to discourse, we find a multitude of encoding strategies used across the circa 7000 thousand spoken and signed languages of the world. A crucial step to understand this diversity is to map out the space of possible languages. One dimension of this space is the diversity of words used to encode different meanings (cf. Gibson et al., 2017; Majid et al., 2018; Zaslavsky et al., 2018).

From an information-theoretic perspective, the encoding potential of words – their entropy (H) – constitutes an upper-bound on the mutual information (MI) with their meanings. Assume a set of words W and a set of meanings M. It follows from standard information theory that (Ferrer-i-Cancho & Díaz-Guilera, 2007, p. 13)

$$MI(W, M) \leq H(W). \quad (1)$$

In other words, the entropy is a fundamental restriction on (unambiguous) information transfer. While for natural languages it is hard to realistically estimate the mutual information between words and meanings, the entropy $H(W)$ can be estimated based on written material and transliterated spoken language.

Orthographic word entropies have been recently estimated for diverse languages and texts (Montemurro & Zanette, 2011; Bentz et al., 2017; Koplenig et al., 2017). Non-trivial lower and upper bounds on word entropies emerge from this research. These bounds are likely related to the trade-off between ease of learning and expressiveness. It has recently been shown that low word entropy distributions facilitate language learning in children (Lavi-Rotbain & Arnon, 2022). High word entropy, on the other hand, facilitates rapid information transfer (Ferrer-i-Cancho & Díaz-Guilera, 2007). At the level of words, natural languages are neither perfectly learnable, nor perfectly expressive. Their encoding potential is the outcome of both pressures acting simultaneously.

However, there are several recurring question with regards to this information-theoretic research:

- Since orthographic words are (somewhat) arbitrary units of writing (Haspelmath, 2011; Wray, 2015), what happens to these bounds if we steer away from orthographic words, and rather use subword patterns as units?
- Are written and spoken languages located in different areas of the entropy space?
- Does higher entropy on the signal side of a language (i.e. words or subwords) imply higher entropy of this language in general?

In this talk, these questions are addressed based on current research.

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Characterizing cross-linguistic regularities beyond semantic similarity

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Keywords: crosslinguistic regularities, semantic similarity, lexical meaning

A growing body of research suggests that the way meaning is organized in the lexicon across languages can be partially explained through latent semantic knowledge –or proxies thereof– such as meanings' associativity; visual resemblance; taxonomic closeness; affective, or distributional relationships. This kind of approach has shown promise in characterizing both large scale cross-linguistic regularities, such as colexification patterns and semantic shifts (e.g., Xu et al. 2020; Di Natale et al. 2021; Brochhagen & Boleda 2022; Fugikawa et al. 2023), as well as developmental data from children's early linguistic behavior (e.g., Ferreira Pinto & Xu 2021). The aim of the present contribution is, on the one hand, to synthesize these findings, with attention to methodological advances made, as well as shortcomings to improve on. On the other hand, I will present preliminary findings concerning regularities that, due to the aforementioned shortcomings, have fallen outside of the purview of past studies.

Broadly speaking, the aforementioned studies all form part of a recent surge in lexical semantic research that is data-driven, cross-linguistic, and domain-general (i.e., not constrained to, e.g., color or number systems). This surge has been enabled by the creation and consolidation of large-scale databases and resources, such as CLICS^3 (Rzymski et al., 2020) or the Small World of Words project (De Deyne et al., 2018). Methodologically, the main approach taken has been to try to explain cross-linguistic variation through one; multiple; or a blend of proxies of semantic similarity such as the ones mentioned above (e.g., with associativity and taxonomic closeness as predictors in a multi-level regression model). These –quite successful– characterizations of cross-linguistic lexical organization have thereby provided further evidence to the idea that "semantic relatedness", operationalized in different ways, plays a central role in the way meaning is stored and deployed across languages. The main shortcoming of such approaches, by definition, lies in not being able to account for lexical regularities explained through factors that are not well accounted for by (language-specific) psychometrics. For instance, independent research suggests that the environment can come to shape language (e.g., Dediu et al. 2017; Josserand et al. 2021) but this idea has yet to be put to the test at a large cross-linguistic and domain-general scale in lexical semantics. Similarly, multi-lingual resources or pragmatic considerations have played little to no role so far. I here provide first results and discussion on methods to do this.

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Title

Evolutionary aspects of lexical meaning. A computational phylogenetic study of colexifying meanings

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Keywords: Semantics, Phylogenetics, Historical Linguistics

Abstract

The directionality of meaning change in the lexicon is a problem in traditional comparative models of language reconstruction. Compared to, e.g., phonological and morphological change, the directions of meaning change over time are difficult to reconstruct. Semantic change typically depends on unpredictable socio-cultural and historical changes in speech communities. Other aspects of change may be related to speakers' cognitive and communicative preferences (Meillet 1912; Ullmann 1962; Sweetser 1991). Potentially endless change directions in combination with unpredictable causes for change has led scholars to point out semantics as an area in which it is difficult—if not impossible—to establish general trends (Ullmann 1962; Anttila 1989). The current paper attempts to reconstruct the mechanisms of lexical meaning change by a quantitative model. We use a data set of 104 core concepts in 160 Eurasian languages from several families, which are coded for colexification as well as cognacy, including semantic change of lexemes in etymologies (Carling et al. 2019). In addition, the various meanings are coded for semantic relation to the core concept, including relations such as metaphor, metonymy, generalization, specialization, holonymy, and meronymy. Further, concepts are coded into classes and semantic properties, including factors such as animacy, count/mass, concrete/abstract, or cultural connotations, such as taboo/non-taboo. We use a phylogenetic comparative model to reconstruct the probability of presence at hidden nodes of different colexifying meanings inside etymological trees, similar to what previously has been done for morphosyntactic features (Carling and Cathcart 2021). We find that the reconstructions come close to meaning reconstructions based on the comparative method. By means of the phylogenetic reconstructions, we measure the evolutionary dynamics of meaning loss of co-lexifying meanings as well as concepts. These loss rates are highly varying, from almost completely stable to completely unstable meanings. Loss rates vary between different semantic classes, where for instance wild animals have low rates and domestic animals and implements have higher rates. We find a negative correlation between taboo animals and loss rate, where taboo animals have lower change rates than any other nouns, including other animals. Further, we find a negative correlation between animacy and loss rate, indicating that animate nouns have lower loss rates than inanimate nouns. A further result is a negative correlation between loss rate and degree of borrowing (borrowability) of concepts, indicating that lexemes that are more likely to be borrowed are less likely to change semantically. Among semantic relations, we find that metonymy is more frequent than any other change, including metaphor, and that a change from general to more specific is in all cases more frequent than the other way round.

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Coexpression and synexpression patterns in lexical and grammatical typology

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Keywords: lexical typology, coexpression, colexification

Both lexical and grammatical typology are often concerned with different ways in which languages map meanings onto minimal forms. Very often, for example, we observe that one language has a single polysemous word where another language has two distinct words (e.g. German *Tasche* 'bag; pocket', contrasting with English *bag* vs. *pocket*). Similarly, we often observe that one language has a single polysemous grammatical marker where another language has two distinct markers (e.g. English *to* 'dative; allative', contrasting with Arabic *li* 'dative' vs. *ʔilaa* 'allative').

Such situations form the basis for semantic maps showing **coexpression** patterns: patterns of grammatical coexpression (or **cogrammification**) for grammatical markers expressing notions such as case or tense-aspect (often called "syncretism"), and patterns of lexical coexpression (or **colexification**) for lexical items. As semantic maps summarize cross-linguistic patterns, and the meanings (or functions) whose expression is studied are comparison meanings, a type of comparative concept. "Coexpression diagram" is a more appropriate name a semantic map, because it does not necessarily show polysemy patterns. Polysemy refers to language-particular multiplicity of meanings, whereas coexpression merely records cross-linguistic correspondences.

In addition to coexpression differences, languages also frequently show **synexpression** differences: A minimal form may simultaneously express several meanings that in another language are expressed by two cooccurring forms. For example, German *Handschuh* (lit. 'hand-shoe') corresponds to English monomorphic *glove*, or English *brother-in-law* corresponds to German monomorphic *Schwager*. We can say that German *Schwager* **syllexifies** the meanings 'same-generation male kin' and 'affinal', which are circumlexified in English. In grammatical markers, too, we find **syngrammification** patterns (often called "cumulative" expression), as when Latin has a suffix *-orum* expressing simultaneously plural and genitive (e.g. *libr-orum* 'of the books'). Again, such synexpression patterns make use of comparison meanings, which must be distinguished from language-particular meanings.

Colexification and syllexification patterns have often been called "lexicalization patterns", but the term "lexicalization" is also often used in a diachronic sense. It is therefore better to distinguish the synchronic concept of **lexification** from the diachronic concept of lexicalization.

This paper has a methodological focus, but I will also ask to what extent coexpression and synexpression patterns are cross-linguistically general and how the generalizations can be explained. I will suggest that the limits on coexpression in lexicon and grammar are mostly due to diachronic paths of change, and that the limits on synexpression in lexicon and grammar are mostly due to frequency of use (as greater frequency leads to shorter coding, which often means synexpressed coding).

Cross-linguistic regularities in perception verb colexification

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Keywords: Perception verbs, Colexification, Lexical typology, Sensory language

Previous typological studies of perception verbs have suggested there are regularities in how sensory meanings are packaged into words, pointing to our shared biology—in particular, a biological hierarchy of the five senses—as a universal constraint on the lexical expression of sensory meanings (Evans & Wilkins 2001; Viberg 1984, 2015). This intriguing idea has yet to be tested quantitatively with a balanced set of languages. Drawing on a genealogically and geographically stratified sample of perception verb lexicons in 100 languages, we investigated whether there are regularities in how sensory meanings map onto words and whether any observed regularities are consistent with the proposed sensory hierarchy.

We focus on two interrelated aspects of form to meaning mappings. First, we ask whether some sensory meanings are more likely than others to be lexically differentiated in perception verbs, that is, to not combine with other sensory meanings in verbs. It has been proposed sensory meanings at the top of the hierarchy are more likely to be encoded in dedicated perception verbs than those beneath them (Viberg 2015). Our study confirms a strong typological bias for visual meanings to be lexically differentiated from all non-visual sensory meanings in perception verbs. We do not, however, find evidence for rates of lexical differentiation to reflect the proposed sensory hierarchy.

Second, we ask whether some combinations of sensory meanings are more likely to be colexified, that is, to be co-expressed in a word, than others. It has been claimed there are cross-linguistic asymmetries in this regard, reflecting 'natural semantic relations' between certain sense modalities (Viberg 1984; Evans & Wilkins 2001). In particular, it has been claimed that: (1) semantic associations are more prevalent between FEEL-TASTE and HEAR-SMELL compared to inverse pairings, reflecting the presence or absence of bodily contact between the perceiver and the stimulus; and (2) TASTE and SMELL are strongly associated, reflecting, perhaps, their close perceptual and neural integration (see e.g., Winter 2019). Consistent with previous generalisations, we find FEEL-TASTE and HEAR-SMELL are indeed more frequently co-expressed in verbs than HEAR-TASTE and FEEL-SMELL. Although not previously discussed, we also find HEAR-FEEL are recurrently colexified across languages. Unexpectedly, TASTE and SMELL are *rarely* co-expressed in verbs, indicating a universal bias against the colexification of these sensory meanings, despite their close biological connections.

We propose two independent, domain general constraints interact to produce this set of patterns: conceptual similarity (i.e., similar concepts tend to share a common label; e.g., Xu et al. 2020) and communicative need (i.e., meanings that need to be distinguished in communication tend not to share a common label). This account aligns with the view that communicative pressures shape the lexical expression of semantic domains (e.g., Brochagen & Boleda 2022, Karjus et al. 2021, Kemp & Regier 2012). Overall, our results challenge the idea that the lexical expression of sensory categories is shaped primarily by our human biology.

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Studying the evolution of word meanings in the lab

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Keywords: language change; colexification; semantic extension; experimental semiotics

Natural languages persist through the cycle of learning and use, where learners learn from linguistic data which represents the communicative behaviour of other individuals who learnt their language in the same way. Languages are therefore the product of a potentially complex interplay between the biases of human language learners, the communicative functions which language serves, and the ways in which languages are transmitted in populations. Language learning and language use are inherently creative processes: when learning we extend and sharpen incipient patterns in the linguistic data we encounter, and in use we push constantly at the expressive envelope provided by our language, finding ways to express the concepts and distinctions we care about conveying. These creative processes drive language change, including change in word meanings, that we can observe in the historical record, and are ultimately responsible for the structure of the lexicons we see in the languages of the world. Invaluable insights into the factors shaping word meaning can therefore be obtained by studying historical cases of change (e.g. Ramiro et al., 2018), or by identifying regularities across languages seen in cross-linguistic corpora (e.g. Kemp et al., 2018).

However, studying natural languages in the wild does not provide the experimental control necessary to identify and differentiate the mechanisms responsible for those patterns. In this talk I will review experimental methods, based around artificial language learning, dyadic interaction and iterated learning paradigms, which shed light on these questions. In these experiments participants learn and use artificial lexicons or other novel communication systems; by manipulating the constraints on learning and the communicative tasks participants must employ those artificial lexicons to solve, we can test hypotheses about the factors shaping the structure of word meanings.

I will cover three related topics, presenting experimental work covering underspecification, colexification, and semantic extension. In part 1 I will review foundational experiments showing how trade-offs between pressures in learning and use shape the extent to which lexicons underspecify meaning, and which dimensions of meaning tend to be underspecified (Kirby et al., 2008; Silvey et al., 2015). In part 2 I will discuss experimental work showing how colexification (use of the same label to express distinct concepts) depends both on semantic similarity (as shown by Xu et al., 2020) and communicative need, with similar concepts more likely to be colexified unless there is a need to distinguish those concepts in communication (Karjus et al., 2021). Finally, in part 3 I will present experimental data showing how shared perceptual experience and world knowledge facilitate semantic extension (Bowerman & Smith, 2022). Together, these methods provide a general experimental framework for testing hypotheses about how word meanings evolve, and why words in natural languages have the sorts of meanings they do.

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Language learning and the emergence of polysemy across languages.

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Keywords: polysemy, word learning, lexical semantics, historical semantic change, cross-linguistic typology

Prevailing theory in language development proposes that—to simplify a challenging inductive learning problem—children initially assume that a new word will carry only one meaning and label a single taxonomic category. Yet although this assumption is thought to support learning, most words in English and other languages violate it, and express multiple, related meanings—a phenomenon called *polysemy*. For example, the English word *chicken* can label an animal or meat (thirsty/tasty *chicken*), *glass* can label a material or artifact (broken/drinking *glass*), and *book* can label an object or its intellectual content (heavy/interesting *book*).

In this talk, I will review research from my lab showing that—contrary to current theories—children are able to learn multiple meanings for polysemous words from early in development, and represent them similarly to adults. Moreover, I will review my research which shows some of the ways in which polysemy facilitates—rather than impedes—learning. First, polysemy allows children to use their knowledge of one meaning of a word to guess the structure of its other meanings (e.g., if a child has learned that *glass* labels a material, they can infer that *glasses* should be made of glass). Second, polysemy allows children to *spontaneously infer* new word meanings (e.g., upon learning that *rake* labels a tool, a child can guess that an action using a rake will be called *raking*, generalizing from how words like *hammer* and *shovel* are used).

Evidence that polysemy facilitates lexical development opens a functional explanation for its ubiquity: polysemy may arise in response to the pressure on language to be maximally learnable. From this perspective, we can make sense of cross-linguistic regularities and variability in polysemy by considering learning constraints. In the second part of my talk, I will review my research supporting this proposal, which finds that instances of polysemy that more often recur across languages reflect conceptual relations that are easier to grasp. Moreover, I will discuss research suggesting that one pattern of English polysemy that is rare across languages is also difficult for English learners to acquire. Also attesting to the role of learning constraints in shaping the lexicon, I will review my recent work which suggests that children can use spatial metaphors to learn new meanings for words that would otherwise be difficult to acquire, helping to explain why such metaphors are so common in languages.

Finally, I will close by discussing research from my lab which explores the origins of children's intuitions about flexible word meanings, and the extent to which they are rooted in early-developing cognitive biases or instead constructed from exposure to polysemy in the language input. Our most recent work is addressing this question by asking how Deaf children, who have not been exposed to a language model, use gestures in the "home sign" systems they *invent*. Strikingly, these gestures exhibit semantic flexibility akin to the polysemy found in full natural languages, suggesting that children play a key role in creating polysemy.

Lexical typology and cognitive semantics: extended uses of temperature terms

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Keywords: Lexical typology, Temperature, Metaphors, Extended uses

Metaphoric and metonymic processes are a central concern of cognitive semantics (e.g., Geeraerts & Cuyckens 2007, Dąbrowska & Divjak 2015), but this field has on the whole operated with a limited number of languages. In fact, very few of the allegedly "universal" metaphors have been subject to systematic large-scale cross-linguistic comparison (some rare exceptions include THINKING AS PERCEIVING, cf. Sweetser 1900, Evans & Wilkins 2000, Vanhove 2008, Georgakopoulos et al. 2022, and INSTRUMENT AS COMPANION, Stolz et al. 2006). There are serious methodological reasons behind this. A central issue in systematic cross-linguistic or typological comparison, which is dependent on comparable data from different languages, is cross-linguistic identification of phenomena. This, in turn, presupposes a rigorous procedure that ensures we compare like with like. This is, however, difficult to achieve with Conceptual Metaphor Theory's insistence on metaphors as more general conceptual associations that do not boil down to individual metaphorical uses or linguistic convention, but can manifest themselves in many different ways. To quote Gibbs (2015:183), "cognitive linguists, and others, should articulate criteria for identifying metaphoric patterns in language and inferring specific conceptual metaphors from discourse. These procedures should be specified with sufficient detail so that other researchers can possibly replicate the analysis and emerge with similar conclusions". Translated into the methodology of systematic cross-linguistic research, this means that we can only test the extent to which some concrete manifestation of metaphor rather than the conceptual metaphor as a whole is found across languages of the world, is very rare, or shows areal and or genetic preferences.

This talk will focus on *extended uses of temperature terms* (such as *warm, hot, cold, cool*), i.e., their uses outside of the temperature domain proper, including uses that are commonly viewed as metaphors (Koptjevskaja-Tamm 2015, Koptjevskaja-Tamm & Nikolaev 2021). These include examples of famous metaphors applying to warming temperatures such as AFFECTION IS WARMTH, e.g., *warm words*, and ANGER IS HEAT, e.g., *hot temperament* (Lakoff & Johnson 1999, Grady 1997, Kövecses 2003, etc.), but also others, applying to warming and cooling temperatures, e.g., PEACE IS COOLNESS, as in *e-naa jɔ* 'his-mouth (is) cold' = 'He is able to create peace always' in Ga (a Kwa language spoken in Ghana) (see also Shaefer 2015). We will look at the areal and genetic patterns in such uses and at their absence across a sample of about 100 languages from all around the world, and discuss to what extent the findings provide evidence for vs. against the allegedly universal conceptual metaphors AFFECTION IS WARMTH (whose linguistic manifestations show a surprisingly limited areal and genetic distribution) and ANGER IS HEAT (whose linguistic manifestations are much more frequent). The study demonstrates once again the dramatic influence of the Anglocentric, Standard Average European, and WEIRD perspective on many of the central concepts and conclusions in linguistics, psychology and cognitive research, and emphasizes the necessity to bring in linguistic diversity into this research (cf. Piirainen & Sherris 2015, Wnuk & Ito 2021, Blasi et al. 2022).

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Self-propelled WALK verbs in Beja (Cushitic)

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Keywords: Beja, Motion, Lexicon, Cognition, Sociolinguistics

Beja, the sole Cushitic language of the Northern branch (Afroasiatic), is mostly a verb-framed language, according to Talmy's (1985, 2009, 2016) typology of motion events (see e.g. Slobin 2006, and Nikitina 2013 for discussion), but it exhibits rich lexical encoding of manners of motion, as well as time, cause, and goal. Leaving aside the typological classification of motion events, this presentation will focus on how the semantic domain of the self-propelled motion of WALKING is carved up. Based on all the tokens extracted from naturalistic data (10 hours of narratives, jokes, and interviews, partly accessible online, Vanhove 2020) I collected in Sudan between 2001 and 2011 from a variety of speakers, and from a bilingual dictionary (Vanhove & Hamid Ahmed in prep.), this presentation will discuss cognitive, communicative, sociological, cultural, and environmental issues related to self-propelled WALK verbs.

Beja counts no less than 34 self-propelled WALK verbs that can be subcategorized into four **lexical** categories, based on morphological and semantic criteria:

1. Base verbs denoting different manners of walking belonging to a dedicated morphological pattern, Ca:C(C)e:C (e.g. *fa:rʔe:k* 'to walk swiftly with great steps, legs and arms apart'; *ma:ke:k* 'to walk heavily legs apart')
2. Base verbs denoting different manners of walking of various morpho-phonological types (e.g. *arfak* 'to walk trembling'; *tas* 'to walk very quickly with very small steps'; *ti:lo:g* 'to walk with very long steps')
3. Pluractional verbs related to six semantic classes of base verbs: BEND verbs, verbs of DIRECTIONAL MOTION, MEASURE verbs, CHANGE-OF-CONFIGURATION verbs, and verbs of FLOWING and ROLLING (some of which also belong to the Ca:C(C)e:C pattern or are derived from type (2)) (e.g. *ʤigʷir* 'to bend' > *ʤigʷir~ʤigʷir* 'to walk bent forward dashing as if in order to catch s.th., s.o.'; *hanig* 'to bend' > *ha:ne:g* 'to walk bent to the side'; *gid* 'to throw' > *ga~ge:d-am* 'to walk heavily swinging the body and/or the arms')
4. Colexifications with verbs of FLOWING and PANTING (e.g. *har* '1. to pant (without a strong sound), 2. to walk swiftly like a panting tired dog'; *ʃankʷa:kʷ* '1. to flow quietly, 2. to walk slowly').

In addition to the two superordinate WALK verbs, *hi:re:r* 'to walk' and *libas* 'to walk at night', three salient manner features are co-expressed in self-propelled WALK verbs: (a) movements of the body, arms, and legs, (b) speed and rhythm, and (c) length of steps, which can combine within one lexical item. In addition, a few verbs also include (d) the aim of locomotion or (e) its direction.

I show that both base verbs and metaphorically induced derived verbs are all motivated by socio-cultural and environmental factors, i.e., social rules of public and private behavior, the importance of camel breeding and caravan trade in the society, and the arid climate. I will also address the communicative role of humorous interactions in the use of the non-basic WALK verbs, which are otherwise rarely used, a scarcity in line with the typological profile of motion events in Beja (Slobin 2006). To conclude, I will discuss possible avenues for further typological and cognitive research in MOTION lexicons.

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General session

METAPHOR, POLITICS AND GENDER: A CASE STUDY FROM GHANA

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ABSTRACT

The study analyses the use of metaphor in a corpus of interviews and speeches given by the former president of the republic of Ghana, the late Flt. Lt. Jerry John Rawlings, and his wife Nana Konadu Agyemang Rawlings, a politician, businesswoman, president of the 31st December Women's Movement, founder of the National Democratic Party (NDP) and the presidential candidate for National Democratic Party the 2016 election. The theoretical background relies on the notion of metaphor as both a conceptual and linguistic phenomenon. I also relied on the social constructivist view on gender and language to address the potentially gendered language use by the politicians. The rationale for the study is based on the assumption that due to their socialisation, women and men perceive the world differently (Kövecses 2005:90) and therefore express these different cognitive models in language features such as metaphoric expressions. Combining quantitative -corpus-based investigations with qualitative text analysis, I concentrated on metaphors that are often used to conceptualise political activity, mainly JOURNEY and WAR metaphors. The analysis reveals that Nana Konadu Agyemang Rawlings uses a slightly higher number of pronounced expressions relating to the JOURNEY metaphor. On the other hand, there was a more pronounced use of the WAR metaphor by the late Flt. Lt. Jerry John Rawlings. Their metaphor use would allow for inferences about gendered metaphor usage by politicians, and more generally about analysing metaphor in political discourse in Ghana.

Keywords: conceptual metaphor, gendered language, cognitive models

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Adaptation of Easy Language Rules to the Needs of Readers with German as L2.

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Keywords: Easy Language, Translation, German as a second language, Comprehensibility, Interview study

From Easy Language (*Leichte Sprache*), a complexity-reduced variety of German, the concept of Easy Language Plus (EL+, *Leichte Sprache Plus*) was developed (Maaß 2020). Easy Language rules have been developed for and with people with cognitive impairments. Target groups like people with German as L2 are often mentioned as another target group, too, but they have differing requirements for complexity-reduction. In the intralingual translation of standard or specialized texts into EL+, the rules must be adapted to achieve a functional translation. More complexity than in Easy Language is welcome, hence creating a form of EL+.

In a qualitative interview study, I assess the comprehensibility and action-orientation of a standard patient information sheet and its translation into EL+. After reviewing the findings from comprehensibility research, L2 acquisition research and reading research, the translation was developed. From September 2021 to March 2022, an interview study validating the comprehensibility and action-orientation of standard text and EL+ translation was conducted. The translation was then adapted according to the feedback.

For a general session, I propose a 20-minute discussion of Easy Language rules that are unsuitable for the target group of learners of German as L2. Using concrete examples, I will discuss selected Easy Language rules, their review from the three fields of research, their implementation into the EL+ translation, and their assessment in the study.

An example of an adapted Easy Language rule is “use easy words”, including the use of native German words and the elimination of foreign words. Research in L2 acquisition suggests that learners of German as L2 have a lower German vocabulary than German native speakers of the same age (Klieme et al. 2006: 25). The use of native German vocabulary may thus not be “easy”. Internationally recognizable foreign words such as Graecisms, Latinisms and Anglicisms could aid comprehension (Heine 2017: 407). In the EL+ translation, the word *Gewebe-Probe* (biopsy) was used. After participant feedback, *Gewebe-Probe* was replaced with *Biopsie*, a Graecism recognizable from Romance languages and English.

This project, funded by the Robert Bosch Stiftung within the interdisciplinary programme “Chronic Diseases and Health Literacy” (ChEG), considers intercultural health communication between experts and non-experts, thus taking into account the current situation in which professional interpreters and interlingually translated texts are not usually provided. The patient information in EL+ thus not only aims to serve the patient, but also to help community members, doctors and nurses who need comprehensible and action-oriented wording.

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Don’t worry, be a senior? The linguistic labelling of late-life depression in major Australian newspapers

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Keywords: late-life anxiety and depression, framing, linguistic labeling, tabooing

While there has been a substantial amount of medical research on depression and anxiety in Australia, it has been recognized that late-life depression is little researched (Gonçalves et al. 2011). These illnesses are still shrouded in taboo (Allan and Burridge 2006; Griffiths et al. 2008), and the stigma is very strong among older adults.

Our research investigates one of the possible contributing factors to this stigmatization process: the frames elicited by the language used to talk about older adults. Since the late 1980s, there has been a reconceptualization of ageing (Rowe and Kahn 1987), which is also reflected in the labels that are being used for older adults. Research indicates that certain labels, such as *seniors* frame older adults more positively (e.g., “like to travel” and “lead an involved and active life”) than *the elderly* (who are believed to be “frail and fall more often” and “are often victims of mental and physical abuse”), for example (Benczes et al. 2018; Allan et al. 2021). Ageing successfully – and joining the group of *seniors* rather than *the elderly* – is not compatible with experiencing mental health issues.

Thus, we hypothesize that late-life depression is framed more "positively" with reference to *seniors* as compared to *the elderly*, depending on the constructions that the keywords appear in. To demonstrate linguistic labelling on the coverage of late-life mental illness, we adopt a corpus-based approach to investigate common labels for old age and older adults (*elderly* and *seniors*), along with the terms *depression* and/or *depressed*. By way of illustration, *The West Australian* notes that "seniors live with depression," while "depression is common in the elderly." The examples show a closer connection between depression and the elderly, as depression can be found "in them." At the same time, depression is something *seniors* only live with, implying a more transitory and less permanent condition. Our study draws on newspaper articles published by eight major Australian daily newspapers: one national newspaper (*The Australian*) and one from each of the respective state (*The Age*, *The Sydney Morning Herald*, *The West Australian*, *The Mercury*, *The Courier-Mail, The Advertiser, Northern Territory News*) between 1987 and 2022, 1987 being the year that the term “successful ageing” was introduced by Rowe and Kahn’s (1987) seminal paper.

By shedding light on the coverage of late-life mental illness in Australian news media over the time span of the past 35 years, the paper thus contributes to the study of how frames can affect the tabooing and stigmatization process of late-onset depression.

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Influence of the category of definiteness on the semantic field – Contrastive analysis of selected German-Polish and Polish-German translations of non-fictional and literary texts

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Keywords: cognitive grammar, frame semantics, metaphor and metonymy, pragmatics and cognition, translation and cognition

The aim of this paper is to show the contrastive shape of the category of definiteness between two Indo-European languages, Polish from the group of Slavic languages and German from the group of Germanic languages. Looking at these two languages, one would think that Polish has worse conditions for expressing definiteness, since it does not use articles. However, this article aims to answer the question whether this is indeed the case. In order to explore the essence of German articles, we must first look at the generally known three-way division into definite, indefinite and zero articles. The approach here is a pragmatic-semantic one, which means that attention is to be drawn above all to the use of the articles in concrete communication situations.

Since articles provide information on how different elements in the discourse relate to each other, the concept of frame semantics and mental approach used by Ronald Langacker (Langacker 2005: 129-133) is well suited to investigate the influence of definiteness on the semantic field (also a key term from the field of cognitive linguistics). This is because the field can change under the influence of a referential expression, including the definite and indefinite article, in such a way that a different overlap of meaning – the essence when transferring a concept from one language to another – arises during translation. In this context, all referential expressions have the same function ¬– they ensure that speaker and hearer focus their attention on the same object of conceptualization (cf. Filar 2017: 27-38). In the practical part of this work, the focus will be on the expressive possibilities of definiteness in the case of two types of text whose field of application is very different, but in which the article (in German) frequently appears as a constituent element. Examples are fixed expressions, phrases, in which it makes a decisive difference which degree of definiteness is used. In marketing texts, these tend to be conventionalized expressions, whereas in literature it is more likely to handle with momentary formations. In the latter, the article has the greater influence on semantics, since literary texts are the more expressive type of text. The aim of this analysis is therefore to show which compensatory strategies are to be used in Polish to keep the recipient's attention focused on the same object of conceptualization. In addition, it will be determined whether the absence of the linguistic device of articles semantically impoverishes the target text. Charles Fillmore's concept of scenes and frames semantics will serve this purpose, as it is the best way to determine what changes the scene created by the original frame in the recipient of the original is subjected to in the translation.

The illustrative material will be Herta Müller's Herztier (the English translation is entitled: The Land of Green Plums) and its translation into Polish created by Alicja Buras and entitled Sercątko from the field of literature and selected advertising texts from my own translation work.

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The clitic *se* and inchoative constructions in Brazilian Portuguese: a replication of Lundquist et al.'s (2016) experiment

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Keywords: inchoative constructions, marking, causative alternation, Portuguese

In the well-known causative alternation, a verb appears either in a causative-transitive or in an inchoative-intransitive form. The inchoative form is marked with a reflexive pronoun in some languages, such as Norwegian (1), but unmarked in others, such as English (2). Contrasting marked (Norwegian) and unmarked (English) inchoatives, Lundquist et al. (2016) conducted an experiment in which participants were shown videos of caused events (e.g. a person breaking a window); each event had two versions: a causative (theme-focus) and an agentive (agent-focus) version. After each video, participants were given a Yes-No question built with the inchoative form of the verb used to describe the scene (e.g. *did the window break*?) – marked in Norwegian and unmarked in English. Their results showed that English speakers say "Yes" regardless of agentivity, but Norwegian speakers say "Yes" only about half the time, with strong effects of marking and agentivity. The authors conclude that different versions of the inchoative structure differ morphosyntactically and semantically across languages, each language having its own pattern. However, Lundquist et al. (2016) do not consider the occurrence of marked and unmarked inchoatives with the same verb, in a single language. Such case occurs in Brazilian Portuguese (BP) (3), and raises the question of whether this type of language behaves like English or Norwegian. So, we conducted a replication of Lundquist et al.'s (2016) experiment with BP speakers, but instead of comparing two languages, we compared two forms of the same verb (marked or not with the reflexive clitic *se*). Our results (Tables 1 and 2) indicate that also within a single language there are effects of marking and agentivity. Unmarked inchoatives reached 90.8% of Yes-responses in the theme-focus context. Reflexive-marked inchoatives reached 72.1% of Yes-responses in the theme-focus context. Comparatively, unmarked inchoatives reached 67.8% of Yes-responses in the agent-focus context and reflexive-marked inchoatives reached 47.1% of Yes-responses in the theme-focus context. In constructional approaches, the causative alternation is an epiphenomenon which emerges when a single verb can be found in two argument structure constructions: transitive and inchoative (Croft 2012; Ruiz de Mendoza & Miró 2019). Assuming this perspective and considering the distinct form-meaning associations found in the experiments, we conclude that the so-called alternation involves, in fact, two different inchoative constructions, besides the transitive construction. Our results confirm the descriptions of Maldonado (2006), Cançado & Amaral (2010), Negrão & Viotti (2015), and Haspelmath (2016): the *se*-marked inchoative construction indicates a non-agentive energetic event, and the unmarked inchoative construction does not conceptualize a causer. Although our data brings evidence for BP, we believe that two inchoative constructions might also be available in other languages. Norwegian presents both marked and unmarked inchoatives, although both constructions are not possible for the same verb (Lundquist et al. 2016). Even in English reflexive-marked inchoatives can be found (Lakoff 1970: 38, Levin 1993: 84), as in (4). We believe that the experimental results presented here corroborate a constructional approach for the causative alternation, more specifically the idea that two inchoative constructions are available in individual languages.

(1) a. Peter åpnet vinduet.
Peter opened window.DEF
'Peter opened the window.'
b. Vinduet åpnet seg.
window.DEF opened REFL
'The window opened.'
(Lundquist et al. 2016: 8)

(2) a. John broke the stick (with a rock).
b. The stick broke.
(Fillmore 1970: 126)

(3) a. O moço abriu a porta do carro.
the guy opened the door of.the car
'The guy opened the car door.'

b. A porta do carro (se) abriu.
the door of.the car REFL opened
'The car door opened.'
(Cançado, Amaral & Meirelles 2017)

(4) a. "This mirror broke itself!"
b. "It just kind of melted itself."
c. "[…] as if the door opened itself on seeing the Honda key-chain dangling from your front pocket."
COCA (the Corpus of Contemporary American English, Davies 2008-).

Table 1: Number of Yes-Responses per verb and context: 444 observations, 74 participants, 6 items.

Verb	Yes-responses in Unmarked/Agent-focus context	Yes-responses in Unmarked/Theme-focus context	Yes-responses in Marked/ Agent-focus context	Yes-responses in Marked/ Theme-focus context	Total number of Yes-responses per verb
Abrir 'open'	18	19	7	6	50
Fechar 'close'	13	20	5	15	53
inclinar 'bent'	11	20	6	7	44
Espalhar 'scatter'	7	14	12	16	49
Derreter 'melt'	15	15	12	19	61
Quebrar 'break'	16	19	7	12	54

Table 2: Model coefficients (logit) for Yes-Responses: 444 observations, 74 participants, 6 items.

Fixed Effect	Estimate	SE	T value	p	Random effect	Variance
Intercept	0.68387	0.04883	14.006	< 0.001	Participant Intercept	0.04
Agent Focus (video)	0.22789	0.05579	4.084	< 0.001	Verb Intercept	0.005
Refl.Marked (question)	-0.21790	0.05794	-3.761	< 0.001		
Ag.Focus:Refl.Marked	0.02013	0.08151	0.247	0.694		

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Constraints on lexical-constructional integration: substance emission verbs and the stative passive construction

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Keywords: emission verbs, voice, passive constructions, stative passive, Portuguese

Passives are nonbasic voice constructions which allow the expression of participants highly salient in discourse which do not have salient semantic properties (Croft 2022). More specifically, the stative passive is a type of passive construction which emphasizes the resultant state of an affected participant of the event, as in (1). According to Croft (2012), this construction only profiles the result state phase of an event. Thus, the stative passive construction is commonly assumed to be able to be combined with verbs that describe changes of state, but not with activity verbs (Croft 1991; Kratzer 2000; Gehrke 2011). Some types of substance emission verbs (as *pee*, *vomit*, *sweat*, etc.), however, although belonging to the second group, occur in the stative passive construction in Portuguese, as in (2). The goal of this work is to analyze such phenomenon, and try to determine constraints that allow for such verbs to (unexpectedly) occur in the stative passive construction. Following a constructional approach (Croft 2012, 2022), we hypothesize that these verbs are not coerced by the constructions, but they have potential to be construed in such a way that their meaning can be compatible with the function of the stative passive construction. For our analysis, we collected 20 substance emission verbs from Borba's (1990) dictionary and also utterances that instantiate each verb in the stative passive construction in Portuguese (Table 1). These verbs lexicalize events in which an animate individual expels some type of substance from out of their body. And as these verbs describe the expulsion of a substance from a source, they also allow a path conceptualization, in which the emitted substance travels a path to a destination, as in (3). Within this conceptualization, the place in which the substance emitted is located as a result of the event is the participant which plays the subject role of the stative passive construction. It is important to note that such surface can also be the body of the individual in itself, as in (4). We argue that such conceptualization is possible, and thus the integration with the stative passive, because in our everyday life if someone spits, vomits or sweats on a surface, that surface becomes dirty – it changes state. That final state, once salient in discourse, is possibly expressed by a stative passive construction. This conclusion can be reinforced by the fact that the substance emitted needs to be "sticky" enough to be able to affect the destination. Verbs such as *soprar* 'blow', for example, were not found in the stative passive construction. The destination of an emitted entity, although not semantically salient (as a causer or agent), is highly salient in discourse, especially considering our everyday experience when we have to clean up a surface that has been peed, vomited or sweated on. We conclude, thus, that substance emission verbs can be combined with the stative passive construction because they allow a type of event conceptualization in which one participant – highly salient in discourse – is seen as affected as a result of the event.

(1) This water is purified. (Croft 2012: 109)

(2) a) Apenas sem lugar para dormir pois minha cama está mijada.
only without place to sleep because my bed is peed
'I don't have a place to sleep because my bed has pee on it.'

b) O tapete também está vomitado.
the rug also is vomited
'The rug also has vomit on it.'

c) A porra do lençol está suado.
the damn of.the sheet is sweated
'The damn sheet has sweat on it.'
(Carvalho 2022: 101, 116, 108)

(3) a) Minha cachorra veio e mijou no tapete do meu banheiro.
my dog.FEM came and peed on.the rug of.the my bathroom
'My dog came and she peed on my bathroom's rug.'

b) Eu tinha 6 anos e vomitei no banco de trás do carro.
I had 6 years and vomited on.the seat of back of.the car
'I was 6 and I vomited on the back seat of the car.'

c) Eu suei no travesseiro.

I sweated on.the pillow
'I sweated on the pillow.'
(Carvalho 2022: 101, 115, 107)

(4) a) Flay está mijada de ontem e não tomou banho.
Flay is peed from yesterday and not took shower
'Flay is covered with pee since yesterday and she did not take a shower.'

b) Yoongi está vomitado e bêbado.
Yoongi is vomited and drunk
'Yoongi is drunk and covered with vomit.'

c) Lucas está todo suado sujo.
Lucas is all sweated dirty
'Lucas is all sweated and dirty.'
(Carvalho 2022: 101, 116, 108)

Table 1: sample of the data set analyzed in this research, from Carvalho (2022).

Verb	Occurrence in the stative passive construction
1. Babar 'drool'	"Hoje eu sonhei com brigadeiro branco meu travesseiro está todo babado"
2. Baforar 'breathe'	*Not found*
3. Cagar 'shit'	"Entro no ônibus, e o banco está cagado"
4. Cuspir 'spit'	"Mas todos sabemos que provavelmente meu lanche está cuspido."
5. Defecar 'defecate'	"Meu chinelo está defecado vei"
6. Ejacular 'ejaculate'	"Segundo Judy, é mais provável que o pênis pareça que está ejaculado."
7. Escarrar 'spit'	"Aquele lugar já está escarrado demais kk"
8. Espirrar 'sneeze'	"Passando pra dizer que seu moletom está todo tossido, espirrado e babado hehehehe"
9. Lacrimejar 'tear up'	"Sim, os olhos estão lacrimejados."
10. Menstruar 'menstruate'	"MARIA ESTÁ MENSTRUADA"
11. Mijar 'pee'	"o mais legal é só perceber que o tapete está mijado quando eu piso nele."
12. Peidar 'fart'	"Andressa Linhares, tenho que dizer, ja tive vontade de da um rolé pela escola na tua cadeira, mesmo sendo todo peidado."
13. Regurgitar 'regurgitate'	"[...] e o bebezinho está no berço chorando, está regurgitado ou está com a fralda suja [...]"
14. Salivar 'salivate'	*Not found*
15. Soprar 'blow'	*Not found*
16. Suar 'sweat'	"Ele se atrasou de novo, na verdade. As fotos foram depois de ele se apresentar. Por isso que Shawn está suado e com o cabelo oleoso ahahahah (mas continua lindo)"
17. Tossir 'cough'	"Passando pra dizer que seu moletom está todo tossido, espirrado e babado hehehehe"
18. Transpirar 'perspire'	"a minha pergunta é: será que esta gente não percebe que está transpirada e que cheira mal?"
19. Urinar 'urinate'	"@LorenaCicari eu esqueci de te avisar que sua coberta está urinada..."
20. Vomitar 'vomit'	"E o livro que você deixou na mesa está vomitado e com a capa em frangalhos, a roupa que você ainda nem comprou e está na vitrine já tem pelos [...]"

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Categorization and Generalization in Second Language Acquisition: Evidence from resultative constructions in L2-English/L1-Portuguese

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Keywords: Resultatives, L2-English/L1-Portuguese, Construction Grammar

In this presentation we take a construction grammar view on productivity and conservatism in language acquisition based on exemplar-based-abstraction to examine the generalizations of argument structure constructions (ASC) in L2 learning. According to Goldberg (2019), adults can productively use a new word in a different ASC than the one they originally heard it "as long as the word's meaning and the ASC are compatible and appropriate in the context." Children on the other hand are much more conservative and "tend to produce only minor variations of the formulations that they witnessed in the input" (p.98). By extending this observation into categorization (Goldberg, 2006), one could assume that the "lack of conservatism" in adults might impact the way they categorize new elements in the input, especially in L2[1]. Goldberg (2006) argues that speakers "classify the instances they hear into categories. Verb-centered categories are categorized together, ultimately resulting in general, abstract argument structure constructions." Thus, it seems worth exploring the role that productivity could play in categorization while learning different constructions.

This study looks into the acceptability rates of resultative constructions in L2-English by adult speakers of Brazilian Portuguese (L1-BP). The exact nature of resultative constructions has received numerous accounts (e.g., Goldberg, 1995; Müller, 2002; Boas, 2003; Kratzer, 2005), and their grammatical status is notoriously elusive to native speakers, as attested by Boas (2003), who also presents many event-frames to capture their meanings.

In our study, one control group with 23 native speakers of English (NS), and two experimental groups with 18 L2-English immersed bilinguals (IB) and 20 L2-English non-immersed bilinguals (NIB) performed a timed acceptability judgment task with 111 sentences, 24 of which comprised our target grammatical[2] (RSLT) and ungrammatical (UNGR) resultatives plus our control depictive sentences (DPCT), as in (1).

(1) a. Paul cleaned the metal and hammered it flat. (grammatical - RSLT)
b. *Rachel bought a cat and fed it sick. (ungrammatical - UNGR)
c. Junior lost his phone and found it broken. (depictive - DPCT)

The predictor variables were the ASC types and the participants' linguistic profile. The outcome variable was the acceptability judgment ratings. A comparison with nested models indicated that both participant profiles ($\chi^2 = 63.726, p$<.001) and constructions ($\chi^2 = 81.513, p$<.001), as well as their interaction ($\chi^2 = 49.342, p$<.001), contribute significantly to the model. The pairwise comparisons using Tukey's HSD test with the best adjusted model indicated that the groups of speakers only differed regarding their acceptability of the ungrammatical resultatives (p<.01), with significantly lower acceptability ratings by NS (figure 1). Also, NS were the only group to rate the grammatical resultatives differently from the ungrammatical ones (p<.001). Thus, L2 speakers were less sensitive than NS to the violations in the resultative predicate, and immersion did not play a significant role in their sensitivity to this type of violation.

In our presentation, we argue that the adult ability to generalize ASCs is actually hindering their L2 capability to constrain the idiosyncratic variations observed by Boas (2003) in his corpus study. Using a SBCG description (Sag, 2012; Michaelis, 2010), we postulate that, at least temporarily, L2 learners license resultative constructions with a generic frame such as in (2), which allows them to map adjectival and prepositional constructions less conservatively to the meaning of the third verbal argument. We believe our results and interpretations match those found by Tachihara & Goldberg (2019), who argue that L2 learners accept novel interpretable sentences more readily than NS.

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1 As Ellis (2013) points out, there are many factors that will affect the learning of form-meaning pairs in L2, such as frequency, salience, significance, prototypicality, generality, redundancy, surprise value, automaticity, transfer, overshadowing, and blocking. Some of them interact with the data and analysis we present, but we do not have space to discuss them here.

2 Similar constructions do not exist and cannot be licensed in the experimental groups' L1 (Portuguese).

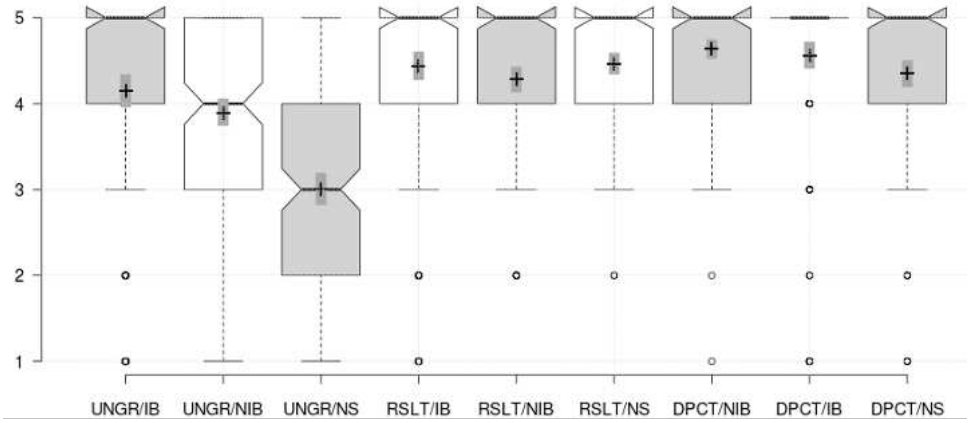

Figure 1: Results

(2) Resultative Lexeme

$$\textit{resultative-lexeme} \Rightarrow \begin{bmatrix} \textit{resultative-verb-lxm} & \\ \text{arg-st} & \langle \text{NP}_x, NP_z, Adj \wedge PP_y \rangle \\ \text{sem} \mid \text{frames} & \begin{bmatrix} \textit{resultative-fr} \\ \text{actor } x \\ \text{theme } z \\ \text{changed } y \end{bmatrix} \end{bmatrix}$$

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Efficient behavior and Target word order variation in low-resource languages of northwestern Iran

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Keywords: Efficient communication, word order variation, Target, processing principles

In the study of word order variation, Hawkins (1994, 2004) and Gibson (1998, 200) argued that certain word order patterns are easier for communication or comprehension. The objective in this study is to examine processing principles as an explanation for Target word order variation (e.g., Behaghel 1909/10; Hawkins 1994, 2004, 2014; Gibson 1998, 2000; Wasow 2002). The term "Target" (T) covers several semantic roles such as physical Goals of MOTION and CAUSED-MOTION verbs, metaphorical Goals of SHOW and LOOK verbs, Addressees of verbs of speech, i.e., SAY verbs, Recipients of verbs of transfer, i.e., GIVE verbs, Resultant-States of Change-of-State verbs, and in part, also EXPERIENCERS and BENEFICIARIES (Asadpour 2022a, b, c). My term 'Target' derives its origin from Haig's discussion of "Goals" (Haig and Thiele 2014: 1). Haig gradually expanded this category by also incorporating destination, direction, or local goals of movement and caused-motion verbs, recipients, and addressees encoded by "full NPs" (Haig and Thiele 2014: 1; Haig 2015: 407, 2017: 408). Eventually his work encompassed final-states and "LVC's (Light Verb Complements) of the light verb kirin 'do' as well (Haig 2022: 5), see examples below for illustration.

1. [Mukri Kurdish, TONI corpus, CS_124c]

V	P	T
da-řo-m	***bo***	***madrasa-y***
IPFV-go.PRS-1SG	**to**	**school-OBL**

'(I) go **to school**.'

2. [Northeastern Kurdish, TONI corpus, AD_03]

V	**P**	**T**
čū	***sa***	***dāy-e***
go.PST.3SG	**on**	**tree-OBL**

'(he) went **on top of the tree**.'

3. [Armenian, TONI corpus, 8-1.19a]

V		**T**
ēt'um	*im*	***dproç***
go.PST	COP.1SG	**school**

'(I) was going to **school**.'

4. [Jewish Neo-Aramaic, Khan 2008: 428, J149A]

X	V	**T**
yrəqli,	*ədyéli*	***belá***
run.off.PST.1SG	come.back.PST.1SG	**home**

'(I) ran off and came back **home**.'

5. [Azeri Turkic, TONI corpus, 4-1]

	V	**T**
bābā	*gēd-ax*	***Mašhad-a***
father	go.SBJV.PRS-1PL	**Mašhad-DAT**

'Father, let's go **to Mašhad**.'

In this study, I will evaluate whether in Target constructions, the sample languages exhibit efficient communication behavior especially when there are options to select between shorter and longer elements or structures with less or larger dependency between the syntactic constituents. The data will be tested on the basis of three sets of narrative speech corpora: (a) published sources (e.g. Khan 2008; Kıral 2001; Öpengin 2016), (b) personal fieldwork (TONI corpus), and (c) crowdsourced experiments. The sample languages are low-resource languages of northwestern Iran such as Mukri Kurdish (Iranian), Northeastern Kurdish (Iranian), Armenian (Indo-European), and Turkic languages (Turkic), all considered to be left-branching languages, and Neo-Aramaic (Semitic) which is considered to be right-branching. The predominant postverbal placement of a specific group of semantic roles called Target requires further investigation.

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Learning morphology with the help of subphonemic detail?

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Keywords: phonetics, morphology, artificial language learning

Recent research has shown that morphological structure leaks into subphonemic detail. In these cases, traces of morphological structure may be apparent on the phonetic level. One example of this is word-final /s/ which takes several morphological roles in English. While there are words with a non-morphemic final /s/ (e.g., *bu**s***), final /s/ can also denote number and case information (e.g., *two pot**s**, the cat'**s** fur*) as well as a cliticized form of auxiliary verbs (e.g., *it'**s** been a long time, it'**s** me in the picture*). Phonetic differences among morphological distinct types of /s/ have been found for several English varieties in corpus studies (Plag et al., 2017; Zimmermann, 2016): several types of final English /s/ come with a unique duration. Experimental studies have also addressed this question (e.g., Walsh & Parker, 1983; Seyfarth et al., 2017) on production differences between categories, however, mostly with mixed results. Recently, a carefully designed production study (Schmitz et al., 2021a) confirmed the central finding from corpus data (Plag et al., 2017; Zimmermann, 2016) with non-morphemic /s/ being the longest in duration, followed by suffix /s/, then followed by clitic /s/.

On a theoretical level, these differences are unexpected when the architecture of language production does not allow for an effect originating from the morphological level to leak down to the subphonemic level (Levelt et al., 1999; Kiparsky, 1982). More recent experience-based models allow for such an influence and only recently it has been shown that the aforementioned subphonemic differences could be explained as emerging from the lexicon on account of naive or linear discriminative learning (Tomaschek et al., 2019; Schmitz et al., 2021b).

The accumulating evidence for the effects in production has raised the question as to whether these durational differences also play a role in comprehension. A recent PhD dissertation (Schmitz, 2022) addressed this question and investigated in a perception and two comprehension experiments whether subphonemic differences play a role in decoding morphological categories. Indeed, it was found that durational differences cannot only be perceived by English speakers but also significantly affected their comprehension process.

The present study now aims at investigating whether language users not only produce, perceive and comprehend durational differences, but also whether these cues are strong enough to guide a learner in morphological learning. We set out to investigate whether the differentiation of morphological categories based on durational cues enables the learner to build up a new representation and whether there is a disadvantage compared to learning morphological categories that differ in phonemes. To avoid native language influences we invented an artificial language with varying final /f/ durations to be learned by adult German native speakers. Participants learn a certain alternation pattern which determines the encoding of singular and plural forms in their artificial language. The alternation pattern varies between experimental groups.

In an ongoing artificial language learning experiment, we are currently collecting data comparing the learning behaviour of these three experimental groups: The 'Phonemic group' learns an artificial language in which plurality is indicated by a phonemic change in the final sound of the word [f~p alternation]. Two 'Phonetic groups' learn an artificial language where plurality is indicated by a shorter or a longer durational difference in the word-final sound [f~fː alternation]. After a short training phase, participants are requested to perform a number decision task to demonstrate what they have learned. In addition to accuracy, we measure mouse tracks to reveal possible fine differences among groups. First results indicate that learners of the 'Phonemic group' have a clear learning advantage over those in the 'Phonetic groups'. Control groups with no specific learning tasks will reveal whether we are actually dealing with true learning behaviour. Our results will tell us whether information exchange between the domains of phonetics and morphology can be beneficial for language learners as they would be able to use durational cues to identify morphologically relevant units.

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Body representation in linguistic expressions of emotions in Bangla

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Keywords: emotion, body, cognition, linguistics, Bangla

The concept of emotion can be described as a process wherein both core affect and conceptual knowledge (Barrett & Lindquist, 2008) play a significant role leading to a wide range of emotions expressed through both verbal and non-verbal communication. According to Planalp (1999), there are five basic components of emotion, namely "(1) objects, causes, precipitating events, (2) appraisal, (3) physiological changes, (4) action tendencies/action/expression, and (5) regulation." (p. 11) This multi-dimensional nature of emotion has drawn attention of researchers from fields dealing with psychological, neuroscientific, and linguistic studies. In this context, one of the most prominent areas of research has dealt with bodily sources of emotions, probably owing to the fact that "discrete emotions are perceptual events" (Barrett & Lindquist, 2008), which is evident from Enfield and Wierzbicka (2002), Bergen, Lau, Narayan, Stojanovic & Wheeler (2010), Kraska-Szlenk (2014), Newman (2014). Therefore, with this background in consideration, this paper explores the linguistic expressions of emotions involving body parts in Bangla.

Bangla is an Eastern Indo-Aryan (EIA) language spoken majorly in Bangladesh and in the state of West Bengal in India. This paper, however, utilizes linguistic data spoken as part of standard dialect in West Bengal. There are three objectives: (i) documentation of bodily sources of emotions expressed in Bangla, (ii) analyzing productivity of these expressions, (iii) determining the "afferent and efferent conceptualization of emotions" (Zhou, Critchley, Nagai & Wang, 2022, p.1) in these expressions. This is a first documentation of emotion sources in Bangla from the perspective of cognitive linguistics. The data is divided into natural, metaphorical, and metonymic expressions based on the criteria of mapping and word-sense boundaries. This qualitative study considers vlogs, advertisements, films, newspapers, comic strips, and short stories as sources of data. To complement this corpus of data, *Samsad Bengali-Bengali Dictionary* is consulted as well as few other sentences are constructed based on author's knowledge of Bangla as a native language and have been heard in daily conversations of other native speakers. A few phrases are mentioned here to illustrate how body parts are reflected in the expressions of emotions in Bangla:

a) Head: /*maʈ̪^{h}a gɔrɔm*/ 'head hot' **[anger]**

b) Mouth: /*muk^{h} ha*/ 'mouth wide open' **[surprise]**

c) Heart: /*mon na͡ʧa*/ 'heart dance' **[happiness]**

d) Intestines: /*naɽib^{h}ũɽi berono*/ 'intestines come out' **[disgust]**

e) Hand and Leg: /*haʈ̪ pa ʈ^{h}anɖa*/ 'hand leg cold' **[fear]**

A closer look at these phrases would reveal that examples (a-b) and (e) represent conceptualization of emotions as efferent, i.e. enacted through the body whereas examples (c-d) conceptualize emotions as afferent, i.e. feelings through the body. It is observed that a wide array of both internal and external body parts are utilized for not only expression of basic human emotions but also for representation of effects associated with these emotions, resonating with the statement "bodily states (as experienced in oneself or observed in others) and representations of psychological situations are very likely perceptually categorized and experienced as a single unified percept" (Barrett & Lindquist, 2008, p. 255). It is also noteworthy that a prominent number of bodily sources of emotions are realized linguistically through use of reduplication, a theme which might be taken up in future research works.

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Compound Verb Structure and Conceptualization of Perception in Bangla

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Keywords: CV structure, perception verbs, Bangla, event integration, cognitive semantics

1. Introduction

The phenomenon of perception has a primary function – "to recognize and identify objects and events and their spatial and temporal arrangements and to provide the environmental input for the construction of a model or cognitive representation of the external world." (Viberg, 2001, p. 1294) The present study utilizes compound verb structure (Abbi & Gopalakrishnan, 1991; Paul, 2003) to analyze conceptualization of senses in perception verbs in Bangla.

2. Objectives

This study aims to analyze how emerging senses of perception verbs – visual perception, auditory perception, olfactory perception, gustatory perception, and haptic perception (Galotti, 2014) – in Bangla is a testimony to the event integration theory (Talmy, 2000). For this purpose, it employs three objectives: a) to categorize perception verbs in Bangla using Viberg's typology, b) to verify applicability of the Viberg's modality hierarchy in Bangla, c) to investigate "how the semantic content of the lexical items (perception verbs and arguments) interact and contribute to the creation of each semantic extension." (Ibarretxe-Antuñano, 2006, p. 236)

3. Methods

Being qualitative in nature, this study has adopted the technique of elicitation to collect data about perception verbs from two sources: i) a group of 10 videos of conversational data in Bangla available on the social media platform, YouTube; ii) a group of 7 animated short films available on YouTube. To complement this corpus of data, a few other sentences were constructed based on authors' knowledge of Bangla as a native language and have been heard in daily conversations of other native speakers.

4. Results

In order to illustrate conceptualization of perception in Bangla, this section provides some results about visual perception verbs in Bangla. There are two verbs of sight in the basic paradigm – a) /ɖæk^{h}a/, an action of scanning the entity which is either intentional or unintentional in nature; b) /ʈakano/, an action of focusing on the entity which is only intentional in nature. The resulting CV sequences of visual perception verbs are mentioned in the following table and are discussed in the next section:

Sl. No.	Main Verb (V1)	Vector Verb (V2)	Meaning (V1+V2)
1.	/ɖek^{h}e/ (lit. to see)	/neoa/ (lit. to take)	to take a look of
2.	/ɖek^{h}e/ (lit. to see)	/rak^{h}a/ (lit. to keep)	to have a look at / to keep a watch over
3.	/ɖek^{h}e/ (lit. to see)	/ɖeoa/ (lit. to give)	to give a look at
4.	/ɖek^{h}e/ (lit. to see)	/p^{h}æla/ (lit. to throw)	to end up watching
5.	/ɖek^{h}-ʈe/ (lit. see-IPFV.PTCP)	/paoa/ (lit. to get)	to get to see
6.	/ɖek^{h}-ʈe/ (lit. see-IPFV.PTCP)	/laga/ (lit. to feel)	to seem

Table 1. CV sequences of visual perception verbs in Bangla

5. Discussion

In Bangla, usually linguistic expressions for visual perception follow the hierarchy of activity>experience>phenomenon based on Viberg's typology. When visual perception is expressed using CV constructions in Bangla, there is a combination of two schemas in the mental lexicon. While V1 (or the main verb) provides information about the act of perception, V2 (or the vector verb) provides information about the process or manner or result of the act of perception. Although both the verbs exist independently manifesting different senses and different schemas, on combining together as a CV sequence one of the senses along with the schema moves to the figure and the other relegates to the background. However, it is noteworthy that V2 schema is retained in the meaning of visual perception verbs in Bangla. To conclude, expression of perception involves a complicated linguistic process in Bangla.

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Constructing *'modal'* networks - possibilities and possible limitations of a usage-based approach of modal verbs based on written interactions

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Keywords Usage-based model, network modelling, modal verbs, Construction Grammar, Interactional Linguistics

While the formal inventory of German modal verbs seems to be quite fixed, the context of use determines to a great extent their meaning, i.e. modality. More theoretically spoken, modal verbs are considered cases in the continuum between lexicon and grammar, as they " resemble canonical lexical items in having clearly discernible meanings. At the same time, their meanings resemble those of classic grammatical markers in being tenuous, abstract, and hard to eludicate" (Langacker 2008: 22f). Considering that meaning emerges through use (Tomasello 2003), the question arises even more whether and how aspects of use can be empirically validly captured and made accessible to a holistic description of modal verbs.

To work on this question, I combine construction grammatical premises (Croft 2001; Goldberg 2006) with interactional linguistic methods (Couper-Kuhlen 2018; Deppermann 2006) to follow a maximalist and strictly bottom-up approach that draws on authentic data. Based on qualitative analyses, I collect formal, semantic and 'usage specific' aspects to generate complex feature bundles for each modal verb occurrence. A statistically based network analysis will subsequently reveal the interconnections of the modal verbs resulting from the qualitatively obtained criteria. The statistically identified relations reveal the way in which usage specific aspects are involved in the meaning specification of the examined modal verbs while interacting with formal and semantic aspects. Following the Louvain method (Blondel et al. 2008), an integrated clustering algorithm leads to the detection of significant communities, i.e. potentially constructions. By defining communities as matter of family resemblance, the approach allows to systematically capture the more or less idiosyncratic structures of concrete usage events, while the detected links reveal a flat network (Lanwer 2020) which suggests an abstract *construct-i-con*. However, since the approach aims to provide statements about the system based on usage-based analysis, some fundamental questions need to be reflected upon: First of all, what actually is enfolded by 'usage-specific' aspects and how are they to be integrated into a Construction Grammar framework? As usage events are naturally unique, it is secondly to be asked, how and to what extent they can and should be abstracted. And thirdly, how compatible are statistical analyses with qualitatively collected categories?

By means of a case study on the use of *wollen* (*will*) and *sollen* (*shall*) in written WhatsApp interactions, the talk focuses on the theoretical-methodological interface of the approach in order to critically challenge these questions.

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R-morpheme as the realization of the boundary-crossing concept in child and adult German

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Keywords: boundary-crossing concept, motion events, child language acquisition of German

1. Introduction The R-morpheme in German has been treated as an epenthetic /r/ which is inserted between an R-pronoun (see Riemsdijk (1978) for R-pronouns in Dutch; Müller (2000), and Hein & Barnickel (2018) for R-pronouns in German), and a preposition that starts with a vowel. According to that assumption, *da/wo-r-über* 'there/where-R-over' would be an instance where an epenthetic /r/ is used. However, I substantiate the claim that the primary function of this morpheme is something other than being an epenthetic sound. Firstly, spatial adverbs like *raus* 'out', *rüber* 'over', *rauf* 'onto', *runter* 'down', and *rein* 'into' do not show a preceding sound, and thus, the R-morpheme does not function as an epenthetic sound in those cases at least. What I claim is that the R-morpheme in German encodes the boundary-crossing concept as per Slobin & Hoiting (1994)'s 'boundary-crossing constraint'. Compare (1) and (2), where the same compound verb *eingehen* 'go in' is used. Since the arriving event in (1) does not involve crossing of a spatial boundary, the realization of the R-morpheme leads to ungrammaticality. By contrast, because there is a boundary-crossing information that is conveyed in (2) (i.e., the Figure enters a room), which is also not conflated elsewhere, the realization of the R-morpheme becomes compulsory.

(1) Sobald Ihre Zahlung bei uns (***r**-)ein-gegangen ist, erhalten Sie per Email eine Bestätigung.
when your payment at us R-in-gone is receive you per email one confirmation
'You will receive notification by email as soon as your payment arrives at us.'

(2) Ich bin *(**r**-)ein-gegangen und habe mir das Feuerwerk vom Fenster aus angesehen.
I am R-in-gone and have me the firework from window from watched
'I went in and watched the fireworks from the window.'

This study takes the R-morpheme as a satellite, à la Talmy (1991)'s two-way typology, realizing the boundary-crossing concept in the complex path concept. By reporting from satellite use by children and adults in the production of self-initiated motion events in German, the present study sets off to test whether children are disposed to establish a one-to-one correspondence between the boundary-crossing concept and its realization (i.e., the R-morpheme).

2. Method Self initiated motion events (N = 959), were extracted from the CHILDES (MacWhinney, 2000) German-Bamberg/Frogs (Berman & Slobin, 1994) corpus. This corpus consists of oral narratives of the Frog Story (Mayer, 1969) by monolingual adults (N = 10; M = 20), and monolingual children (N = 33) in German. Child subjects' ages ranged from 3;3 to 9;11. Child age groups involved 3-year-olds (N = 12; M = 3.7), 5-year-olds (N = 11; M = 5.4), and 9-year-olds (N = 10; M = 9.6). In each self-initiated motion event, each path expressed outside the verb root was coded either as including the R-morpheme or not. The percentage of the R-morpheme used as a path device was calculated for each subject.

3. Results A simple linear regression was calculated to test if age in months significantly predicted the percentages of R-morpheme used as a path device with self-initiated motion events by all subjects. A negative correlation (r = -0.72) (see Figure 1), and a significant regression equation was found ($F(1, 41) = 45.37$, $p = 3.898e\text{-}08$) with an R^2 of .5253 and with a slope of -0.25. There was no use of this morpheme by children that was ungrammatical. Even though there was variation amongst child groups, only one of the 3-year-olds produced fewer of the R-morpheme compared to the highest-performing adult.

4. Discussion The results showing a significant and negative correlation between age in months and the percentages of the R-morpheme in German revealed that, compared to adults, especially younger children have a bias towards realizing this concept into language. While adults in German prefer to use path devices where the boundary-crossing is implied (or conflated) but not overtly realized, children are prone to providing 1-to-1 correspondence between the boundary-crossing concept and the R-morpheme. This interpretation of the results is adopted from Guasti et al. (2022), according to whom children may produce more linguistic material than it is compressed by adults.

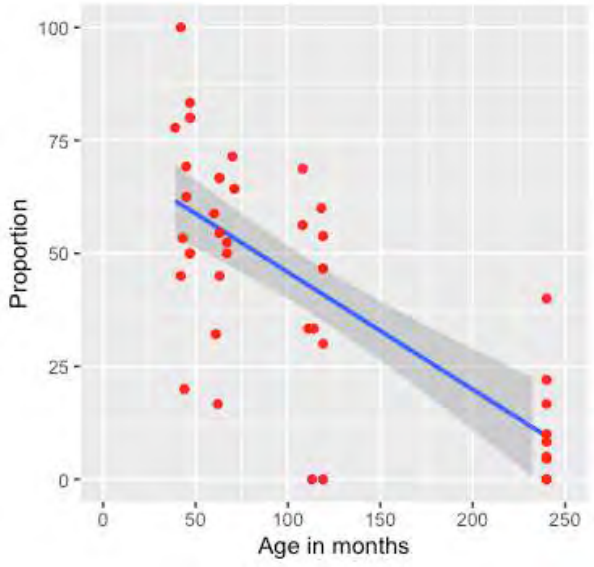

Fig. 1: Proportion of R-morpheme over time

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When life is no longer a journey: The effect of the COVID-19 pandemic on the metaphorical conceptualization of life among Hungarian adults – a representative survey.

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Keywords: life, metaphor, Hungarian, COVID-19, contextual influence, struggle/war, journey

The COVID-19 pandemic fundamentally impacted the life of people all around the world. It not only put people's physical health at high risk, but it also triggered a variety of social isolation measures, such as quarantine and social distancing, radically altering day-to-day habits and routines. Can such an exogenous shock, as contextual influence (Kövecses, 2015), also affect our metaphorical conceptualizations concerning LIFE? Based on an earlier representative survey carried out in Hungary in the pre-COVID era in 2016, Benczes and Ságvári (2018) found that older generations view LIFE predominantly as STRUGGLE/WAR, while young Hungarian adults have a tendency to conceptualize LIFE as JOURNEY and ADVENTURE.

We carried out a follow-up survey on how Hungarian adults conceptualize LIFE in February 2021, during the second wave of the COVID-19 pandemic, when travel restrictions were in full force in Hungary. Our results indicate that the pandemic had no profound effect on what metaphorical sources Hungarian adults used to conceptualize LIFE. The range of the most frequent metaphorical source domains in 2021 was remarkably similar to those of 2016, with a restricted set of major metaphor types – including STRUGGLE/WAR, ROLLERCOASTER, GAME, TREADWHEEL, ADVENTURE, CHALLENGE, GIFT, JOURNEY, THEATER, WEATHER – dominating metaphorical conceptualization across all age groups.

However, the COVID-19 pandemic significantly impacted the frequency of use of some of these source domains. According to our data, the STRUGGLE/WAR source domain became the most frequent conceptualization in the full sample, showing a prominent increase in all of the generations. JOURNEY, however, substantially decreased in the whole sample, especially among young adults. Our study also found that the choice of preference of the source domains showed less alterations among older generations – implying that the older we get, the more resistant to change our metaphorical conceptualizations become, even under extreme conditions such as COVID-19.

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Contextually constrained, locally free – Shifted subjectivity and non-anaphoric reflexives

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Keywords: Construction Grammar, non-anaphoric reflexives, subjectivity

Even though Construction Grammar (CxG) prides itself with the possibility of describing language *in toto*, the influence and incorporation of discourse-pragmatic information is still a work in progress. Several studies have addressed the issue (see for example Kay 2006; Lambrecht 2001; Bai 2014) and this work aims at adding another puzzle piece by analysing non-anaphoric reflexives (NARs), i.e. reflexives without antecedents, as constructions which are dependent on contextual information in order to explain their syntactic as well as pragmatic idiosyncrasies.

Discoursal context plays an integral role in the licensing of particular constructions. A sentence like *Mother drowned baby*, for example, is only acceptable in a context such as headlines or interlanguage (cf. Östman 2005) or the 'past + *now*' construction which mainly occurs in the context of Free Indirect Discourse (FID) (cf. Nikiforidou 2010; 2012). The relation between constructions and their contexts is however not unidirectional, instead "the presence of a or some particularly salient form(s) can be sufficient to metonymically call up the larger constructional frame" (Vandelanotte 2022: 13).

Similar to the examples above, NARs are contextually licensed. They are pre-eminently, but not exclusively, present in FID passages and serve as indicators of this particular style (cf. Brinton 1995; Vandelanotte 2022). Usually, reflexive pronouns are dependent on an antecedent in the same clause and express the subjectivity of the speaker (cf. König & Siemund 2000), but both these constraints are removed within FID contexts (see (1) and (2)).

(1) *A being so differently constituted from herself, with such a command of language; able to put things as editors like them put; had passions which one could not call simply greed.*
(Woolf, Mrs. Dalloway; as cited in Brinton 1995: 189)

(2) *The vision of her tormented him all the days of his life, as she had been then, a strange, exalted thing having no relation to himself.*
(Lawrence, The Rainbow; as cited in Brinton 1995: 188)

Antecedents of NARs do not need to occur within the same sentence (see (1)) or they occur in another clause (see (2)). Additionally, NARs do not express the subjectivity of the speaker, i.e. usually the narrator within literary contexts, but that of the non-speaker, i.e. the protagonist (cf. Brinton 1995: 172).

The goal here is to reanalyse NARs through the lens of CxG in order to capture both the formal syntactic peculiarities as well as the functional aspect of shifted subjectivity with regard to the licensing context. Selected examples of both 'standard' reflexive pronouns and NARs will be analysed in order to examine and describe how discourse context contributes to the construction and how to enrich constructions with discoursal-pragmatic information.

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The conceptualisation of BOREDOM in English, French and Russian: a quantitative corpus-driven study.

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Keywords: boredom, behavioural profile, lexical semantics

Although boredom is commonplace and has been extensively studied in social psychology, no linguistic research so far has discussed the emotion in a cross-cultural context. This study seeks to establish the conceptual structuring associated with this emotion in British English, American English, French and Russian. Applying the Behavioral Profile Approach (Geeraerts *et al*., 1994, Gries, 2003, Divjak & Gries, 2006), the study examines patterns of usage of 'boredom' terms to reveal cultural similarities and differences. Specifically, the research investigates the hypothesis that these languages structure the emotion concept differently and, by extension, it can be inferred that the experience of boredom also differs. Recent findings suggest that this divergence does exist in Anglo-Saxon, Western and Russian societies and that it is historically and socially motivated (Tochilnikova, 2021).

The concept is operationalized through the lexical categories of 'boredom', 'skuka' and 'ennui' respectively and their verbal and/or adjectival profilings: *bored*, *boring* and *dull* in British and American English, the adjective *skuchnyi* 'boring' and neuter predicate *skuchno* 'bored' in Russian, *s'ennuyer* 'be bored' and *ennuyeux* 'boring' in French. This operationalization is based on the principle of cultural keywords (Wierzbicka, 1997) and the relative frequency of occurrence (Glynn, 2014, Krawczak, 2014). In total, 1429 random occurrences were retrieved from stylistically homogenous corpora of online diaries (Speelman & Glynn, 2005/2012, Yang *et al*., 2019) and annotated by two annotators. Establishing the behavioral profile of the usage of each lexeme involves the manual annotation of its contextualized occurrences for formal and semantic characteristics such as causes, responses, stimuli and intensity of boredom. These factors are directly informed by the results of psychological studies of boredom (Raffaelli *et al*., 2018) as well as the results of lexical studies of the conceptualisation of emotions (Kövecses, 1990, Wierzbicka, 1992).

The obtained dataset is then submitted to multiple correspondence analysis. At this stage, the goal of the study is to identify any form-functional associations in the four socio-cultural contexts. Exploratory results show that with respect to conceptual-lexical structure, regardless of the language, the usage of the adjectives designating 'boredom' is associated with monotonous activities and content, which suggest a simple, common or "everyday" type of boredom experienced when an individual is already engaged in an activity (long lectures, work, subjectively uninteresting tasks). Additionally, the nouns (boredom, skuka, ennui) are associated with more abstract causes such as low-challenging environment and unknown cause implying the experience of a complex existential boredom. While in all three languages boredom arises due to similar causes, it is expected that cross-cultural differences will be observed with regard to the behavior in reaction to boredom stimuli: the other-directed French and English will seek distraction (often entertainment) in response to a mundane environment in contrast to inner-directed Russians expressing discontent and looking for change.

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The semantics of Compound verbs and its representation using FrameNet: The case of Assamese

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Key words: Compound verbs, Frame semantics, Coherent Semantic Frames

The current paper makes an effort to analyze the semantics of compound verbs in Assamese and the conceptual links that exist between them within the framework of Frame Semantics (Fillmore, 1977, 2006, 2007). The use of complex predicates has been identified as a significant areal feature of South Asian languages (Abbi, 1991). The combinations and the semantics of compound verbs in Assamese, an IndoAryan language spoken in the North-eastern part of India, has, however, hardly been addressed. A compound verb, also known as a CV, is a combination of two verbs that, when used separately, denote different actions but, when used together, denote a single occurrence, each of which contributes a certain amount of information to the whole. These verbs are combined in such a way as to produce a "coherent semantic frame," which will be represented for Assamese with the assistance of the FrameNet project (Baker et al. 1998) (*https://framenet.icsi.berkeley.edu)*. Each verb evokes a frame, while a CV evokes two frames corresponding to the two verbs. The argument realization is determined either by the V1 or the V2. In the examples below, the head that selects the argument is in bold.

1. moi [donor] tai-k [Recipient] kam-tu [Theme] [kor-i **di-l-u**]$_V$ ***(S-IO-DO-V)***
I she-ACC work-CLF do-CP give-PERF-3
'I did the work (for her)'

2. moi [Ingestor] aam-tu [Ingestibles] [**kha-i** di-l-u]$_V$ ***(S-O-V)***
I mango-CLF eat-CP give-PERF-3
'I have eaten up the mango'

However, in certain combinations the Vs are not compatible with each other. The paper claims that the reason behind such an ungrammatical structure is due to "incoherent semantic frames". For example,

3. *ram-e ghor-tu [dekh-i di-l-e]
Ram-ERG house-CLF [see-CP give-PERF-3]
'Ram has seen a house'

The sentence in (3) is ungrammatical because the '*dekh*$_V$' refers to an involuntary action, and '*de*$_V$' refers to a voluntary action. Thus, the paper will focus on the possible combinations of V1 and V2.

In order for the evoked frames to be compatible with one another, the 'frame elements' must coincide with each other, semantically, creating a CV in the process (the connection that exists between the frames will be represented through the use of FrameGrapher). In this paper, four commonly used light verbs, i.e. *'de'* (give), '*ah*' (come), '*pa*' (get), and '*ut*^{h}' (raise) will be investigated, as well as some polar verbs that can be combined with them. Thus, the paper will argue for the 'universality' of frames and hopefully contribute to the addition of new categories to the existing FrameNet database.

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Fifty shades of 'no'

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Keywords: polar answers, negation, pragmaticalization, formulaic units

Polar questions are defined by their ability to be answered positively or negatively. Typologically, the most common means for that are short words like YES and NO (Enfield et al. 2018). This set of default particles can be non-binary: e.g., German and French have a third marker of confirmation for negative contexts (Pope 1976), and Finnish has two YES-particles, *niin* and *yoo*, opposed pragmatically (Sorjonen 2001). In this paper, we show that negative answers also exhibit great variability, although, usually, outside of the default set.

Besides the closed set of default particles, a language can have a whole range of secondary means of saying 'yes' and 'no' (cf. English *Exactly! OK! Nope!).* They form an open class, with great variability both in terms of function and surface structure. Notably, they are quite often formulaic, cf. English *You bet! No way!*

We collected a database of formulaic negative answers in Czech, English, French, German, Italian, Korean, Polish, Russian, Serbian, Slovenian, and Turkish. All these languages have dozens of secondary NOes besides the default negation particle. In the database, they are manually annotated by multiple parameters (see Buzanov et al. 2022).

From this sample, we draw two major conclusions. First, the choice of the units strongly depends on the illocutionary type of the utterance to which it replies (the stimulus). Many expressions distinguish between stimuli like requests or suggestions, and stimuli like polar questions and declaratives (cf. 1a-b). It allows categorizing them, accordingly, into classes of refusal, and (factual) negation. These classes further split into subclasses based on additional semantic components (like assessment or intensity, cf. 2a-b).

Secondly, the surface structure of these units allows for reconstruction of their original semantics. Some structural models proved to be consistently productive across the language sample. E.g., negation intensifiers often detach from the sentence and start functioning as an independent negative answer (cf. the equivalents of *By no means!* in 3a-d), sometimes even without overt negative markers (3c-d).

The investigation of the secondary negation and confirmation units can be a first step towards the typology of pragmaticalization, i.e., the combination of formal and semantic change that leads to the emergence of new pragmatic markers. The default particles YES and NO can be regarded as an ultimate result of that process; there is etymological evidence that at least some of them go back to formulaic units (cf. Russian *net* 'no', from 'NEG be.PRS.3SG here'). The default YES-NO systems can remain stable for many centuries; consequently, there is often lack of data to establish the etymological source of the particles, let alone trace the conditions that provoked their pragmaticalization (cf. the debate on the origins of *yes* in Wallace & van der Wurf 2013). The data on the secondary means of confirmation and negation gives us a valuable opportunity of a usage-based examination of their movement towards the functions of YES and NO.

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Examples
(1) French
(a) refusal
– Donne-le-moi. – ***Pas question.*** */* ***??Tu parles.***
'– Give it to me. – **No way**.' [InterCorp15]

(b) negation
- Je te bats! - ***Tu parles.*** */* ***??Pas question***'
- I'm beating you . – Yeah, right (= Not at all).' [InterCorp15]

(2) Serbian
(a) moderate negation
– Volite ragbi? – ***Baš i ne.***
'– Do you like football? – Not really'. [InterCorp15]

(b) intensive negation
– Stani. Ne kriviš valjda mene zbog onog malopre? – ***Taman posla****. Ko može tebe da krivi?*
'– Wait. You ain't blaming that back there on me? – **No**. Who could blame you?' [InterCorp15]

(3) Negation intensifiers as negative answers

(a) Slovenian: *niti slučajno* 'neither accidentally'

<intensifier>
To me ***niti slučajno*** *ne zanima.*
'I do not care about it **at all'**. [InterCorp15]

<negative answer>
– Dam ti denar, če mi ti daš avto. – ***Niti slučajno****.*
'– I'll give you the money if you give me the car. – **No way!**' [InterCorp15]

(b) German: *auf keinen Fall* 'on none-ACC.M.SG case-ACC.SG'

<intensifier>
Schäden dürfen ***auf keinen Fall*** *selbst repariert werden.*
'Damaged items may **by no means** be repaired by yourself.' [InterCorp15]

<negative answer>
– Kann ich eine Freundin mitbringen? ***– Auf keinen Fall.***
'– Can I bring a friend? – **Absolutely not**.' [InterCorp15]

(c) Turkish: *hiç de bile* 'ever also even'

<intensifier>
Hiç de bile *endişelenmiyorum.*
'I'm not worried **at all**' [InterCorp15]

<negative answer>
– Jennifer ne dese onu yapıyorsun. – ***Hiç de bile****.*
'– You always do what Jennifer tells you to do. – **No, I don't.**' [InterCorp15]

(d) Polish: *za skarby* 'for treasure-ACC.PL'

<intensifier>
Za skarby *nie pójdą do lekarza*
'They will **never** go to the doctor.' [InterCorp15]

<negative answer>
Ale siąść do kolacji z taką śmierdzącą chujowizną jak ty? ***Za skarby****.*
*'*But to sit and dine with a piece of shit like you? **Never'**. [InterCorp15]

Fractal Metaphor MEMORY IS IDENTITY in Autobiographical Narrative

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Keywords: fractal metaphor, transcultural identity, autobiographical narrative

The present paper applies cognitive metaphor theory (CMT) (Lakoff & Johnson 1980) to the metaphorical conceptualization of the lived experience of the writer in Kulyk Keefer's *Honey and Ashes: A Story of Family* (1998). This research aims at applying an interdisciplinary approach that integrates the methodological tools of narratology (Herman 2009) and cognitive poetics (Stockwell 2002) to a selection of extracts revealing the "split self". The focus is on how the transcultural nature of the authorial identity represented in *Honey and Ashes* can be interpreted via the idea of split self (Emmott 2002) and how such narrative strategy allows the blending of two ethnic authorial identities – Ukrainian and Canadian to be integrated into the authorial autobiographical memory.

Transcultural identity can be seen as "a personal identity based on the multiple intercultural contact experiences that can have a long-lasting effect on a person's values and worldview" (Vauclair et al. 2014: 12). More importantly, the notion of transcultural identity, in turn, becomes inseparable from the "narrative performance" of identity and a number of "situated performance events" within which the autobiographical memory is created. Narratological approaches, which have been extensively involved explicating the relationship between narrative and identity (Freeman 2001), prove to be of great value in the exploration of the representation of memory and bring into view the fictional possibilities for memory construction. As fractal engages in recursive construction, or the repetition of itself, and consequently, it looks similar across all scales, we believe that a fractal metaphor (Author 2014) gives rise to: (a) multiple correspondences and blends in conceptualization of the lived experience; and (b) visual representation of splitting selves across multiple scales.

While doing justice to Conceptual Metaphor Theory, it fails to grasp all the intricacies and the dynamic character of the metaphor's use. Adopting fractals to CMT, we contend that the metaphorical conceptualization can be enhanced through the fractal metaphor MEMORY IS IDENTITY that draws attention toward fractal split selves, i.e. its plural manifestations as the shapes of real fractals which are both embodied (in a physical body) and embedded (in a physical environment). As Kulyk Keefer argues, "I begin to doubt my own reality, knowing that during our stay here I'll be someone other than I think myself to be. A spy, looking for something that doesn't exist anymore. An envoy, making this return voyage for my mother and aunt, and in some ways for my absent sons as well. And a ghost by proxy, standing in for my dead grandparents, who would see things differently, overlaid by memory, not merely story. The ghost of a ghost, a nearsighted voyeur whose vision, even when corrected by glasses, will remain imperfect, only half-true" (Kulyk Keefer 1998: 256). Finally, "glass ghosts brought back, if not to life, then to the next best thing: to memory" (ibid: 307). Her autobiographical memory is a metaphorical bridge towards her transcultural identity, the past of her grandparents and her Ukrainian-Canadian origin. The sense of being a spy, an envoy, a ghost by proxy, and the ghost of a ghost taken together like split selves which participate in the formation of the fractal model MEMORY IS IDENTITY, thus resulting in the dynamics of multiple recursive shapes of the authorial identity.

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Spoken fluency: Is the internal dialogue a model for spoken interaction, or the other way around?

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Keywords: Fluency, inner speech, dialogue

The concept of spoken fluency is a mundane idea, accessible to non-specialists, generally referring to speed and accuracy. The source domain for fluency in many languages is that of running water. However, it is remarkably difficult to pin down exactly what is meant by fluency and Heike (1985, p.135) notes that the literature is "replete with vacuous definitions". In this presentation I will suggest that the source of the paradoxical intuitive familiarity versus metacognitive difficulty of the fluency concept is based around the interrelationship between external, spoken dialogue and inner dialogue.

In classical antiquity Plato stated that thinking is 'the soul's dialogue with itself', presenting the concept that inner thought is a dialogue rather than a monologue. Although some claim not to experience inner dialogue (Fernyhough 2016) the phenomenon is widespread and recognizable to most people as noted by Langacker (2008, p. 459).

It is a basic principle of cognitive linguistics that human experience in and of the external world serves as a source for cognition and linguistic expression. I suggest that our conscious experience of inner dialogue combined with our experience of external dialogue are interrelated, each informing and structuring the other.

I propose that internal and external dialogue have some important commonalities: They take place in a recognizable language (English, Japanese or whatever); they follow the grammatical patterns of that language; they are rooted primarily in the auditory channel; they unfold over time, et cetera. However, there are some differences between the two instances of dialogue. Insights from conversation analysis have revealed that "discourse and conversation have their own forms of organization, distinguishing them from mere strings of sentences or clauses, forms that need to be analyzed in their own terms." Gumperz (1996). External interactions are characterized by practices which cannot be manifested in the same way, or at all, in the internal dialogue. For example, external dialogic interaction is driven by what Heritage (2012) calls 'the epistemic engine'. Also, participants engage in a carefully managed system of turn-taking, (Sacks et. al 1974), orienting to a 'no gap, no overlap' ideal. Interactions open and close with recognizable greeting and degreeting sequences. Repair of trouble sources is a common occurrence. By contrast, in the internal dialogue it is impossible to be epistemically K+ and K– simultaneously, lessening the driving force of the epistemic engine. In internal dialogue, 'current selects next' as a mode of speaker transition, using such transition moves such as 'How about you?' is not a feature. Trouble sources such as mishearing ("Fifteen or fifty?") and other such perturbations are not possible in the internal dialogue. Thus, our internal dialogue is fluent in a way that external dialogue occasionally mirrors, but the two modes differ sufficiently to make fluency simultaneously both an intimately familiar and oddly elusive concept to pin down.

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Worrying about Your Future: How Anxiety Influences People's Implicit Spatial Conceptions of Time

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Keywords: Temporal Focus Hypothesis, anxiety, emotional experience, temporal-focus attention, metaphorical sagittal orientation of time

According to the Temporal Focus Hypothesis, people's sagittal mental space-time mappings are conditioned by their temporal-focus attention (de la Fuente et al., 2014) . Based on this, it can be predicted that, by virtue of their future-oriented thinking, individuals with high anxiety should be more likely to think about time according to the future-in-front mapping than those with low anxiety. Utilizing a combined correlational and experimental approach, we found converging evidence for this prediction .First, participants were asked to complete questionnaires about how they generally feel about anxiety or their dispositional anxiety. Next, to increase comparability with previous research, the time diagram task and the Temporal Focus Scale (TFS) were used to gauge people's mental orientation of sagittal time and temporal-focus attention. The two instruments were adapted from de la Fuente et al. (2014) and Shipp, Edwards and Lambert, respectively. In the time diagram task, participants saw from a bird's eye view a cartoon character's head in the center of the picture between two empty boxes, one in front of the participant and the other at his back. Studies 1 and 2 found that individuals higher in dispositional anxiety and state anxiety, who characteristically worry about the future, were more likely to conceptualize the future as in front of them and the past as behind than individuals lower in dispositional anxiety and state anxiety. Study 3 showed that participants who were induced with anxiety mood tended to map the future on a frontal position, compared to those in the baseline condition. These findings shed further light on the Temporal Focus Hypothesis, which provide the first experimental evidence that emotional experience can influence people's temporal-focus attention in determining their metaphorical sagittal orientation of time.

Title.
How necessity is expressed in research articles: a frame semantics perspective

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Keywords: necessity marker, Frame Semantics, research article, English for Academic Purposes

Linguistic markers expressing necessity (henceforth necessity marker), such as necessary.a, essential.a, and indisipensible.a, have been recorded as a part of academic vocabulary in many academic vocabulary lists (e.g., Ackermann & Chen, 2013; Gardner & Davies, 2014; Simpson-Vlach & Ellis, 2010). They have also been extensively researched as members of attitude markers in metadiscourse analysis (e.g., Hu & Cao, 2015; Hyland & Jiang, 2016; Mur-Dueñas, 2010). However, studies in these directions analyzed necessity markers based only on decontextualized frequency counting. Consequently, little is known regarding how necessity markers interact with related semantic elements in the textual context. A theoretically and methodologically feasible way to reveal this potentially meaningful pattern is by applying frame semantics to analyzing necessity markers, treating them as lexical units that evoke the Being-necessary frame, and investigating the distribution patterns of the frame elements. Taking this approach, the present study compared the distribution patterns of five frame elements of the Being_necessary frame, which are Requirement/Required_entity, Dependent, Dependent_individual, Degree, and Explanation, between the academic portion and the other portion of COCA and between the soft disciplines and the hard disciplines in the academic portion of COCA. These five frame elements were selected for statistical analyses because they were the most frequently instantiated elements of Being_necessary while its other frame elements seldom appeared. Through a series of chi-square tests of contingence, it was found that the academic genre differs significantly from other genres in COCA in the distribution pattern of the five frame elements, whereas no significant difference was observed between the soft disciplines and the hard disciplines within the academic genre of COCA. These results indicate that academic genres not only employ more necessity markers but also use them with different frame element configurations from other genres. Based on these results, the author calls for more scholarly attention to this type of nuanced pattern of academic vocabulary for a deeper understanding of academic writing.

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Contextual effects on Chinese idiom processing: an ERP study

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Keywords: Event-related potentials, Contextual effects, Chinese idiom processing, N400, P600

Context referring to the words or sentences surrounding any part of a discourse can determine the meaning of the lexical items during language processing. There is general agreement that a context that biases towards a certain interpretation can either facilitate or inhibit the recognition and semantic integration of metaphorical meanings in alphabetic idioms that also have plausible literal interpretations. However, the impact of a biasing context on the processing of metaphorical meanings in logographic idioms, such as Chinese idiom that has a high literal plausibility, is not as well-understood.

The present study used brain event-related potentials (ERP) to measure brain activities during language processing to investigate whether Chinese four-character idioms (also known as chengyu) with high potential for literal interpretations are processed differently when they are presented in semantically congruent and incongruent sentence contexts.

Forty literally plausible Chinese idioms with high frequency, familiarity and semantic transparency were presented in three sentence contexts: metaphorical-bias context (MC), literal-bias context (LC) and unrelated context (UC). Participants (native Chinese speakers) were requested to judge whether the idiom was semantically congruent or incongruent with the sentence context. Figure 1 illustrates the overall sequence of events for one trial.

Our behavioral results found longer reaction times for the Chinese idioms presented in the MC than those in the LC. The idioms that followed the UC had the shortest reaction times. ERPs results obtained using parameter-free cluster permutation statistics showed larger negativity at 280–500 ms (see Figure 2), a typical time window for the N400 response reflecting semantic processing, for the idioms in the MC compared to those in the LC. The N400 effect generated by the idioms in the UC was larger than those in the MC or in the LC at the parietal brain areas bilaterally. Additionally, the P600 response, reflecting further context processing, was larger for the idioms presented in the UC compared to those in the MC at the right centro-parietal brain areas (see Figure 3).

Our results showing faster reaction times and smaller semantically related brain response (N400) for the idioms presented in the LC than those in the MC, suggesting that less processing effort is required for the idioms following the LC. Furthermore, our results propose that a biasing context can facilitate the access to the literal interpretation of a Chinese idiom compared to its metaphorical equivalent.

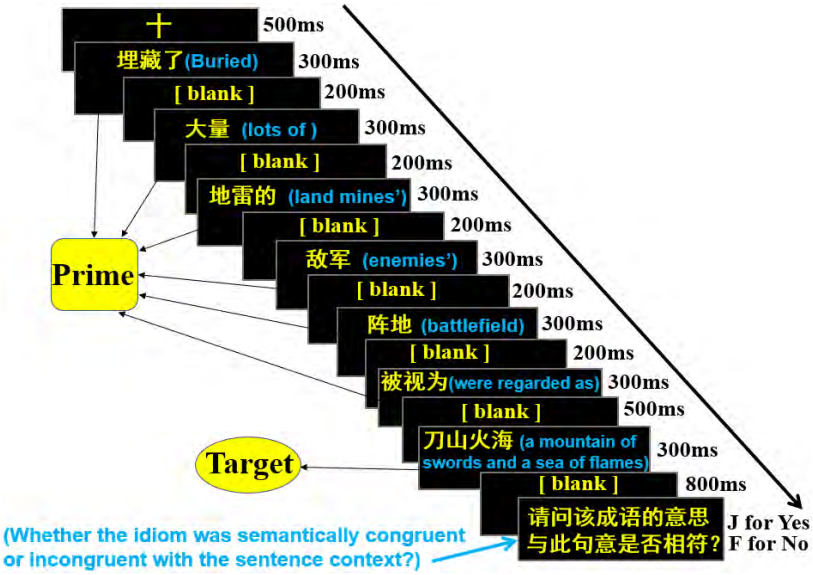

Fig. 1 Overall sequence of one trial in this ERP experiment [Note: Only yellow texts-Chinese characters were presented at the center of the screen during the experiment; (blue texts) are corresponding word-by-word English translations, which were displayed here only for the purpose of comprehension.]

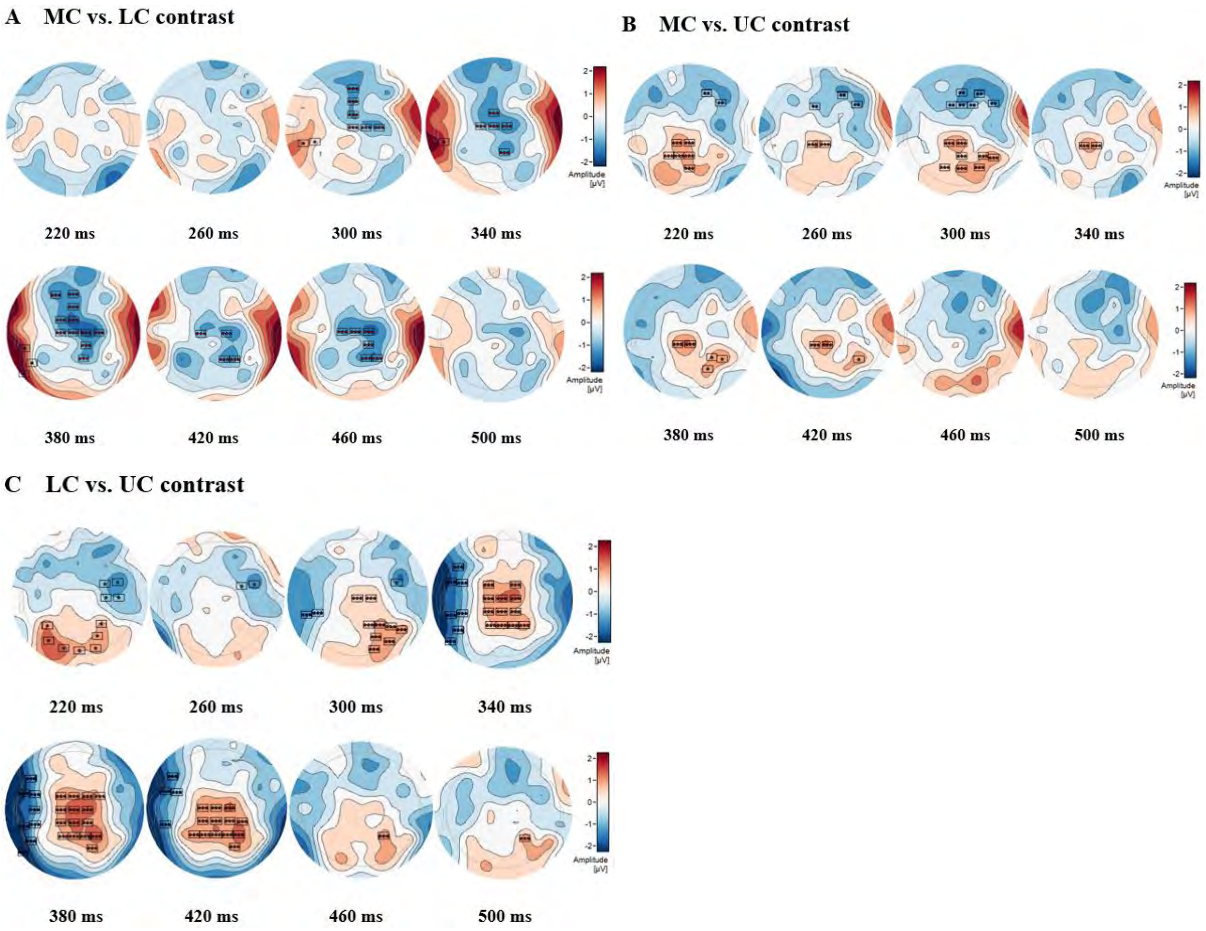

Fig. 2 Cluster-based permutation topographies between the brain responses for the idioms in the MC and LC (A), MC and UC (B), LC and UC (C) for the time points: 220 ms, 260 ms, 300 ms, 340 ms, 380 ms, 420 ms, 460 ms, and 500 ms. The stars denote significant clusters for the ERP differences with negative distributions at frontal-central-parietal regions for the brain responses between the MC-LC contrast, MC-UC contrast, and LC-UC contrast (2 stars = p <.005; 3 stars = p <.0005).

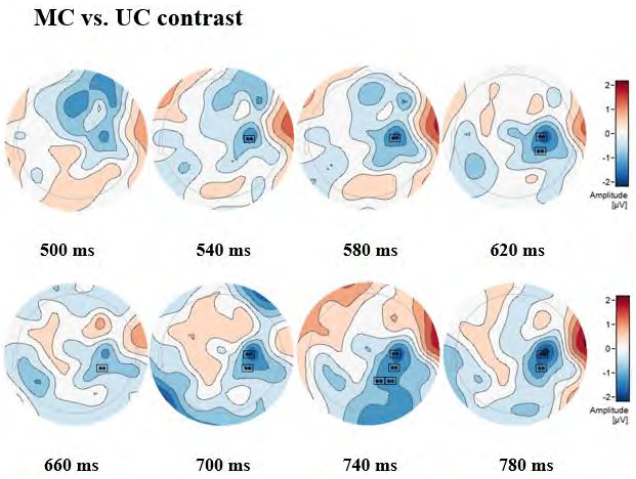

Fig. 3 Cluster-based permutation topographies between the brain responses for the idioms in the MC and UC for the time points: 500 ms, 540 ms, 580 ms, 620 ms, 660 ms, 700 ms, 740 ms, and 780 ms. The stars denote significant clusters for the ERP differences with negative distributions at the centro-parietal regions for the brain responses between the MC-UC contrast (2 stars = $p < .005$).

Behavioral Profile: Quantitative Corpus-Based Study of Temporal Adverbial *Yixia* and *Yihui* in Mandarin

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Keywords: Behavioral Profile, Corpus Linguistics, Temporal Adverbs, Near-synonyms

Temporal adverbials are important in Mandarin as they modify verbs in order to express various temporal relations. Two temporal adverbials, *yixia* and *yihui*, are used frequently and sometimes interchangeably as they both indicate short duration of time when modifying verbs, as shown in (1).

(1) a. wo xiangyiao xiu-xi *yixia*.
1.SG want rest short time
"I want to rest for a while."
b. wo xiangyiao xiu-xi *yihui*.
1.SG want rest short time
"I want to rest for a while."

As observed in previous studies, V-*yixia* construction is polysemous as it denotes "exact times" of the action as a verbal classifier (e.g., da *yixia*), short period of time, or as a downtoner to mitigate the extent of the action. On the other hand, V-*yihui* is most associated with short duration of the action. Since there are cases where these two terms are not able to be substituted with each other, distinction between these two constructions is worth exploring as to uncover their usage differences.

Previous research explores characteristics of *yixia* and *yihui* from traditional syntactic, semantic perspectives respectively (Gan 2004, 2005; Hsieh 2007; Jiang 2012) and mainly focuses on the description of their restriction and the process of grammaticalization, while fewer attempts are made to compare two terms from all linguistic aspects and/or from a quantitative corpus-based perspective. Therefore, this study investigates differences between constructions of V-*yixia* and V-*yihui* by adopting a quantitative corpus-based method of behavioral profile (Gries & Divjak 2009; Gries 2010).

The present study utilizes corpus data extracted from COCT (Corpus of Contemporary Taiwanese Mandarin) and annotates them with linguistic features discussed in previous studies. In particular, previous studies have suggested that V-*yixia* and V-*yihui* differ in their co-occurrences with varying verb types and speech acts (Gan 2004, 2005; Hsieh 2007). 200 utterances associated with V-*yixia* and V-*yihui* are randomly selected respectively and manually tagged with verb types (Divjak & Gries 2006; Levin 1993) and speech acts types (Searle 1965). The results of our behavioral profile analysis show that compared to speech acts, verb types are the distinctive feature, and among which *yixia* prefers mental verbs and communication verbs, while *yihui* is more likely to co-occur with physical action verbs based on the pair wise difference. In addition, the speech acts they are associated with have similar distributions, suggesting the less distinctiveness of speech act variation. The discrepancy could be due to the fact that both terms function as mitigators in context and they are employed in limited situations. This distinction could be helpful in terms of language pedagogy as clear usage patterns could be provided for language learners so that a correct construction is used in appropriate context. Although the present study considers verb types and speech act types as potential factors distinguishing these two constructions, future study may take into account other features such as registers and styles for analysis.

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Spatial Frames of Reference in Igbo

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Keywords: Cognition, Frames, Igbo, Reference, Space

As humans, one of the fundamental tricks of cognition is the spatial nature of our thought. One major area of research in modern linguistics and the cognitive sciences is concerned with finding out how spatial concepts and relationships are expressed in language. Spatial frames of reference evince the salient ways and perspectives through which our understanding and cognition of space is manifested in language. It is widely agreed that languages of the world fall into three basic attested frames of reference in the domain of space (Levinson, 1996; 2003). However, African languages have had little to no representation in the studies carried out in this area. This study intends to fill this void in Igbo. Consequently, the study attempts to categorize the conceptualisation of the domain of space in the Igbo language in line with the given frames of reference in the literature and a uniform spatial schema (Tenbrink, 2011). Based on this, Igbo sentence examples gotten from recorded conversations of Igbo speakers in Awka (Anambra, Nigeria) are used to show the different possible frames of reference. Consequently, it is discovered that the intrinsic and relative frames indeed manifest in the language, although one might argue that they are both intrinsic. Furthermore, Igbo also shares the absolute reference frame (Senft, 2017). However, the absolute reference frame found in Igbo involves a dichotomy in relation to the vertical axis (up and down) unlike some other languages that use compass directions such as north, east, south and west. Hence, constructions like ḿgbágó (upper region or uptown) and ḿgbádà/ḿgbédè/ǹdị̀dà (lower region or downtown) are commonly used for spatial location in Igbo.

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Multimodal speech processing in consecutive dialogue interpreting: Evidence from EEG and HRV experiments

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Keywords: consecutive dialogue interpreting; cognitive load; electroencephalography (EEG); gestures; multimodality

In a bidirectional process of consecutive dialogue interpreting, communication is mediated by a professionally trained individual who retransmits messages back and forward between two languages. Despite a seemingly language-centered character of interpreter-mediated encounters, the act of interpreting is described as multimodal, embodied cognitive activity (Martín de León & Fernández Santana, 2021:277). Previous research showed that gestures not only facilitate verbal renditions in L2 (Galhano-Rodrigues, 2007), but also prove to be an important asset in bidirectional settings, where they are used to coordinate turn-taking (Vranjes & Brône, 2021). Moreover, existing studies showed that interpreters tend to reproduce speakers' referential gestures both in simultaneous conference interpreting (Zagar-Galvao, 2019) and in dialogue interpreting (Chwalczuk, 2022). Thus, a claim is formulated that gesture production during interpreting is motivated by the attempt of decreasing the cognitive load generated by this intense language-processing task (Cienki & Iriskhanova, 2020). The goal of this project is to examine the impact of gestures' visibility and gesture production on the cognitive load of the interpreters working in consecutive dialogue mode.

Does seeing speakers' gestures facilitate interpreting? When interpreters are forbidden to gesture, does it increase their working memory load? With a view to answering these questions, we set 2 experimental tasks, focusing respectively on the comprehension of the source message and the production of the target message. The participants are recruited among graduate interpreting students (English-Polish, N=30). Task 1 consists in interpreting from bilingual video recordings presented in PsychoPy and illustrating a mock police interrogation with an allophone user. In one of the videos, visibility of speakers' gestures is manipulated: a still image of the actors' bodies – from the neck down – is superposed on the original video to create an illusion that they never move their hands. Stimuli in task 2 are video recordings of a mock doctor-patient interaction with visible gestures of the speakers, however gesture production of the interpreter is inhibited by the instruction to keep one's hands on the table during half of the interpreting task.

Speech and gesture production are filmed and continuous electroencephalographic (EEG) and heart rate variability (HRV) measurements are taken throughout the procedure. Additionally, after each condition, the participants are asked to self-evaluate their performance and answer questions adapted from the NASA Task Load Index to assess their cognitive load. EEG preprocessing and analysis are performed using the EEGlab toolbox for MATLAB. To address the issue of oculomotor and muscle artifacts, the independent component analysis (ICA) and artifact subspace reconstruction (ASR) algorithm are applied to raw data (Koshkin et al., 2018). Drawing on the latest EEG findings in cognitive interpreting studies (Boos et al., 2022), we analyze the mean of online values of theta power at a frontal (F3, Fz, and F4) and alpha power at a parietal (P3, Pz, and P4) electrode pool to assess the impact of gesture / no gesture conditions on the mental effort (Antonenko et al., 2010) recruited in consecutive dialogue interpreting.

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Structural language distance: the invisible variable in modeling the bilingual brain. An approach from Parkinson's disease

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Keywords: Parkinson's disease, structural language distance, declarative/procedural model, single network model, bilingualism

Two models try to explain the neurocognitive basis of language in bilinguals:

The declarative/procedural model (Ullman 2001; Ullman 2001; Ullman et al. 1997; Paradis 2009; Paradis 1994) suggests two memory systems that are engaged with language. The declarative system sustains the no rule-governed levels of language, whereas the procedural system manages the rule-governed ones. The two systems operate in different brain areas, and the age of acquisition and proficiency among bilinguals are important variables.

On the other hand, the single network model (Perani & Abutalebi 2005; Abutalebi & Green 2007) argues that there is only one system with shared brain areas, even in the case of bilinguals.

Both models point out the importance of the basal ganglia in language. In the declarative/procedural model, they are involved in the procedural memory in early, high proficiency bilinguals. In the single network model, they mediate word selection for monolinguals and language selection in bilinguals. Basal ganglia are affected by Parkinson's disease from early stages.

However, both models present inconsistencies when considering the results of studies that focus on language performance in bilingual Parkinson's disease patients (Cattaneo et al. 2019; Cattaneo et al. 2015; Johari et al. 2013; Lee & van Lancker Sidtis 2020; Zanini, Tavano & Fabbro 2010; Zanini et al. 2004). Either they reveal deficits in one language or no differences between languages. A possible explanation for this phenomenon could be a variable not yet considered: structural language distance between L1 and L2. Structural language distance is different between studies, from a small distance as in the case of Catalan-Spanish, to the large distance between English and Korean.

Our hypothesis is that structural language distance is crucial for explaining language performance in L1 and L2, rather than the affectation in the basal ganglia. That is, language distance may be more relevant than the implication of a concrete brain area (basal ganglia) in bilinguals: the bigger the distance, the bigger the differences between L1 and L2.

In this study, we compared language performance in Catalan and Spanish in 8 bilingual Parkinson's disease patients. We used an adaptation of the Bilingual Aphasia Test (BAT) of Michel Paradis, which includes the following: a detailed bilingual history questionnaire which contains all variables present in the models (age of acquisition, exposure to L2, language use, proficiency) among relevant others, such as switching tendencies (also analysed in language performance, are significant for the implication of the basal ganglia); language tasks that examines all language levels (morphology, phonology, syntax and lexicosemantics) in L1 and L2; and translation tests. Furthermore, the Bilingual Aphasia Test has been adapted for more than 70 languages, which facilitates testing structural language distance in multiple language combinations.

To date, our preliminary results show no significant differences between L1 and L2 performance in Catalan-Spanish speakers, which challenges the models' hypotheses. The lack of significant differences in L1 and L2 among the multiple language levels could be due to small language distance. Further research is needed to compare linguistic performance in language pairs with different structural language distances, also considering the influence of the traditional variables on bilingualism.

Will structural language distance become a significant variable to consider when modeling language and cognition?

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Personal pronouns and the construction of memetic meaning

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Keywords: deixis, Internet memes, multimodality, personal pronouns, simile, viewpoint

Internet memes are a genre which relies on standard language use, while adjusting forms and meanings to specific memetic roles. For example, as demonstrated in Dancygier & Vandelanotte (2017), memes representing predictive constructions applied to specific meme-characters omit the subject NPs (e.g. *Gets mad at you / tells you why* over a picture of 'Good Girl Gina'). The reason why the grammar of memes changes some standard rules of syntax and reference in English is that the discourse of memes, while resembling direct speech, does not set up standard deictic grounds. We suggest that relying on the concept of viewpoint networks (Dancygier & Vandelanotte 2016) leads to a satisfactory explanation of the forms used in memes.

The paper analyses several types of memes, to uncover the nature of memetic discourse spaces and the meaning of the pronouns used. Here, we show three types of memes: *when*-memes (Fig 1), *what if I told you* memes (Fig 2), and *me/also me* memes (Fig 3). These memes typically profile three discourse participants: the meme-maker (MM) and meme-viewer (MV), who represent the context in which memes are made and received, and, on the other hand, the meme-character (MC), an identity represented in the meme, via an image, or relevant discourse, or both.

Memes typically mimic Direct Discourse (DD), suggesting that the pronominal choices are made based on conversations. However, these conversations are not conducted against any specific Deictic Ground; rather, they are 'demonstrations' (Clark & Gerrig 1990) of attitudes and viewpoints. In Fig 1, a similative meme (Lou 2017, 2021), uses the 2nd person pronouns (*your, you*) to attribute the mood represented by the monkey's dispirited posture to MVs. The MM's once experienced mood is thus generalized over any MV who found themselves unable to use their phone.

MM does not typically refer to themselves as "I", as the form is effectively reserved for MCs, who are construed as addressing another MC or any MV. In Fig 2 what is said by a character in *The Matrix* applies to a contemporary social media platform (Instagram), outside of the movie's narrative. References to MM reporting their own experience typically use *me* as a reporting pronoun (as a condensed reporting frame similar to that used in interview styles), and then use *I* as DD (see Fig 3). Overall, the *me/also me* pattern is clearly that of demonstration/depiction (Clark 2016), with one space constructed linguistically, and the other via an image. Like most memes, this type also references a pattern of behaviour, not a specific event.

Overall, our analysis shows how memes manipulate Discourse Spaces, Deictic Grounds and pronoun use in ways that profile generalized behavioral patterns. All the identities referred to are used as illustrations of the patterns and inhabit behavioural spaces or generic discourse spaces. The transfer of attitudes between MMs' experiential spaces and those of MVs' experiences constructs viewpoint networks, while de-emphasizing specific identities. We argue that the memetic use of pronouns serves the needs of network construction and the expression of attitudes, not of reference.

Fig. 1: 'When' meme

Fig. 2: 'What if I told you' meme

Fig. 3: 'Me / Also me' meme

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Modeling morphological development using Network Analysis

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Keywords: Network analysis, Hebrew verb system, Productivity, Language acquisition, Semitic roots and patterns

The dynamic nature of language development entails growing complexity of networks between forms and functions, as well as between functions and between forms. Network Analysis in linguistics has been used to explain dynamic relations especially in the realm of semantic networks, analyzing their structure and development. The present paper proposes a novel methodology to account for emerging patterns of use by analyzing morphological form-form relations as networks. We account for the relations between the Semitic constructs of roots and verb patterns (*binyanim* 'buildings'), the morphological building blocks of Hebrew verbs. We analyze new Hebrew corpora of input to young children, and children's own output, in dyadic and peer interactions: Child speech in interaction with caregivers between the ages of 1;8 to 2;2 years, child peer talk of six age groups (2;0–2;6, 2;6–3;0, 3;0–4;0, 4;0–5;0, 5;0–6;0, 7;0–8;0), adults' speech to infants (3 months, 6 months, 9 months, 12 months), and to toddlers (1;8–2;2), and storybooks for young children. Using network analyses of the relations between roots and patterns in each corpus, we reveal emerging patterns of links, manifested as root-based and pattern-based derivational families. We show that the morphological development of the Hebrew verb category can be modeled by the measures of (i) network hubs (based on degree centrality), as representing patterns' linkage, (ii) changes in node centrality, as representing importance within networks, (iii) network density, as representing growth potential, and (iv) network modularity and community structure, as representing emergent morphological categories. Our findings indicate that in both child speech and child directed speech networks linkage increases with age, nodes change centrality within the network, density values decline with age, networks become less modular, and larger, more coherent communities emerge. These findings add another facet to the quantification of language development, specifically modeling the emergence of morphological categories and system-level productivity.

That story is hella awkward! Tracing the diffusion and usualization of *hella*-intensification

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Keywords: intensification, language change, EC-Model

The intensifier *hella* is rather (in)famous for its flexible syntactic distribution, its status as a regional shibboleth of Northern California and the Bay Area, and its etymology. It thus comes at little surprise that the expression has recently gained some serious interest among syntacticians, (perceptual) dialectologists, and (diachronic) construction grammarians (see e.g., Adams 2009; Boboc 2016; Bucholtz 2006; Bucholtz et al. 2007; Hoffmann & Trousdale 2011; Russ 2013; Trousdale 2012; Wood 2019).

From a cognitive perspective, it appears that the emergence of *hella* is a straightforward case of coalescence brought about by an increase in usage-frequency of the original utterance hell of a, which eventually led to automatization and phonetic reduction: *hell of a* > *helluva* > *hella*. This fails to explain, however, why the syntactic distributions of *hella* and its source form exhibit noteworthy frequency asymmetries. Unlike *hell of a* and *helluva*, which prototypically modify nouns, *hella* seems to mainly modify adjectives (e.g. *hella good*, *hella righteous*; here competing with more conventional intensifiers like *very* or *really*) and only more recently nouns (e.g. *hella things*, *hella people*; here competing with *a lot of* or *many*) in PDE. Also, historically, the most frequent element to follow both *hell of a* and *helluva* is *lot*, while *hella lot* is comparatively rare. How do we get from *(a) hell of a* N to *hella* ADJ? According to Trousdale (2012), it is the pre-adjectival position of *hell of a* in utterances like a *hell of a nice thing* that essentially gave rise to the decategorialization of the entire pre-head material and its reduction. Yet, data from the Corpus of Historical American English (COHA; Davies 2010) indicate that modified NPs are also relatively infrequent. Seeing that the syntagmatic associations between the elements in the pattern *(a) hell of a* N may be stronger than in the case of *(a) hell of a* ADJ N, at least from a historical perspective, it is difficult to argue for a clear path in the emergence of *hella*.

The goal of the present study is to revisit the emergence and usualization of *hella* with regards to its parent forms by utilizing both historical and contemporary corpus and web-based data of American English. It will be argued that *hella* has mainly piggybacked on the diffusion of its phonetic and functional relatives *sorta*, *kinda*, and *lotta.* Additionally, it will be shown that, despite the conventionalization of *hell of a* in English in general, *hella* remains mainly a localized phenomenon, its pop-culture-induced awareness, which has been shown to be major boost for other contemporary construction (cf. Daugs 2019), notwithstanding. To account for the changes on the theoretical end, the study draws on Schmid's (2020) Entrenchment-and-Conventionalization Model, which unifies the cognitive and social dimensions of language and thus lends itself to account for the case of *hella*-intensification at the individual as well as communal level.

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Source-Goal Asymmetry in Event Segmentation: A Comparison of English, Korean, and Mandarin

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Keywords: Motion Event, Source-Goal Asymmetry, Typology

This study explored the features of Source-Goal asymmetry (Lakusta & Landau, 2005; Lakusta & Landau, 2012; Lakusta et al., 2017; Papafragou, 2010; Regier, 2007) in event segmentation by comparing verbalization data from English (Satellite-framed), Korean (Verb-framed), and Mandarin (Satellite- or Verb-framed). We predict that Source-Goal asymmetry is robust in cross-linguistic event segmentation but not encoded uniformly across different morphosyntactic devices (verbs vs. satellites in Talmy's terms).

In the verbalization task, 20 English speakers, 20 Korean speakers, and 20 Mandarin speakers orally described "what happened" in 11 short animated videos on complex motion events involving a circle (cf. Bohnemeyer & Caelen 1999; Bohnemeyer et al., 2007) in their native languages. The subevents of [Departure], [Passing] and [Arrival] were coded and multiple comparisons of English, Korean, and Mandarin in goal-bias (one-way ANOVAs) were computed.

The results showed that Source-Goal asymmetry affected the amount of event unit information given in English, Korean, and Mandarin — i.e. the asymmetry persisted despite the typological differences amongst the three languages. Notably, the asymmetry was less evident in English as compared to Korean, since path adpositions might be the only means of encoding path information in English but not in Korean (path verb and path adpositions were both used). The asymmetry was significantly less evident in Mandarin as compared to Korean ($F(1, 57) = 5.31$, $p = .006$). The Source-Goal asymmetry might be diminished in or absent from uses of the Mandarin path verb system either because verbs (unlike adpositional phrases) cannot be omitted, and/or because Mandarin possesses dedicated source and goal path verbs.

Our findings suggest that a shared bias in spatial language interacts with language-specific aspects of spatial encoding, and this interaction shapes event segmentation across languages (Gerwien & Stutterheim, 2018)..

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The impact of structural properties in the adaptation of utterances

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Keywords: Adaptation, Complex Morphology, Prosodic Prominence

In recent years, linguistics has experienced a shift towards an 'evolutionary framework.' At the core of this framework is the view that linguistic structure emerges from other forces (which can be cognitive, communicative or social), and that these forces create a 'complex adaptive system,' a system that is not stable, but constantly adapting and dynamic (Bülow et al. 2017; Beckner et al. 2009; Geert and Verspoor 2015; Mufwene 2008, Steels 2000). The relationship between actants in the system can be illustrated in feedback-cycles. For example, a speaker-hearer cycle is integrated with a user-structure cycle. This raises the question about the impact of different elements in the cycles and of the cycles themselves on the development of language structure.

This paper researches the impact of structure itself in the evolution of language. According to Croft (2000), utterances – chunks of language material that people utter – are selected by users, and the structure adapts to functional-communicative constraints by users. This process is an instantiation of the General Analysis of Selection (GAS), a generalization of Darwinian ideas of biological selection (Hull 1988). Structure is seen as something that adapts to users. However, adaptivity can be also conceived of as adaptivity to the cycle itself, following Developmental Systems Theory (Oyama 1985/2000; Griffiths and Gray 1994, 1997, 2001). In this case, both the interactor (users) and the replicator (structure) contribute to the stability of the cycle, in a feedback-relationship. This means that some phenomena in language might be more widely distributed than expected because they are part of cycles upheld by structural properties of the replicator.

The effect of structural properties can be seen in the persistence of complex features of language that aren't adaptive for users, such as lexically conditioned inflection (LCI). LCI involves inflectional paradigms that are unpredictable because they are either restricted by certain lexemes or by lexical classes. Users must therefore not only know the paradigm but also the lexeme (class) to master the correct inflection. Examples include ablaut systems or conjugation classes in Indo-European languages, and similar patterns across the globe, such as in Yelî Dnye (Yele, Papua New Guinea), Zuaran Berber (Afroasiatic, Tunisia) or Ket (Yeniseian, Russia). However, LCI shows relevant structural associations with other parts of words. Our study of 79 verbal morphological positions with LCI in 30 genetically and geographically distant languages shows that LCI frequently patterns with prosodic prominent positions such as stressed syllables, as opposed to 134 non-lexically conditioned inflectional positions. While prominence is adaptive for users, LCI is not; however, its mediation through another structural level causes longer replication lineages. The takeaway of these findings is that evolutionary linguists must account for the role of structural elements through which user adaptivity is mediated or adopt a view in which adaptivity is understood as adaptivity to cycles, and not to elements within cycles.

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Language adapts to its environment: The case of morphosyntactic reduction in Paamese and North Sámi

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Keywords: Linguistic Niche Hypothesis, Indigenous Languages, Possession, Morphosyntax

The *Linguistic Niche Hypothesis* (Lupyan & Dale 2010) proposes an explanation of linguistic diversity that is based on mechanisms of cognitive pressures associated with social dynamics. It claims that if we know the size of an ethnolinguistic community, and the proportion of adult second language learners in a population, we can predict the morphological complexity of a language. The hypothesis is based on the logic that L2 speakers rely more on lexical storage and less on combinatorial processing of morphologically complex words than speakers who learned the same language as their first (Silva & Clahsen 2008, Clahsen et al. 2010), which makes the paradigms of highly inflected languages difficult to learn for adults (i.e., the cognitive pressure). L2 speakers are therefore assumed to speak a morphologically-simplified version of highly inflected languages. In a given population of speakers, if the proportion of L2 speakers is high enough relative to the size of the population (i.e., the social environmental pressure), the L2's individual simplified linguistic signature will spread to the whole population and over time simplify the morphology of the whole language. Hence the claim that 'grammatical structure adapts to social structure', just as biological organisms adapt to ecological niches.

The vast majority of the 5,000 indigenous societies of the world find themselves in a situation where the language they speak have been institutionally minoritized by active discriminatory assimilation policies, or by passive discrimination resulting from a lack of opportunities to access education in the L1. Previous findings (Janda & Antonsen 2016) suggest that such societal situations prevent whole generations of speakers from acquiring their native language in childhood, which leads to morphosyntactic reduction over a few generations of speakers. Does this situation, which is overwhelmingly common in indigenous societies, have an impact on the structure of indigenous languages over time?

We address this question with a cross-sectional and cross-linguistic study involving two indigenous linguistic communities, who live a world away from each other, but find themselves in a similar societal situation. We collected linguistic and social data from 60 Paamese speakers (Austronesian, Vanuatu) and 60 North Sámi speakers (Uralic, Northern Norway) with a behavioral experiment, where participants described video prompts pertaining to possession. North Sámi and Paamese speakers can express possession with a synthetic construction (1 & 3) and an analytic construction (2 & 4).

(1) *Tamo-k* (Paamese)
Father-1SG
'my father'

(2) *Tata ona-k* (Paamese)
Father POSS-1SG
'my father'

(3) *Áhččán* (North Sámi)
father.N.SG.Nom.POSS.SG1
'my father'

(4) *Iežán áhčči* (North Sámi)
Refl.1SG father
'my father'

The results of our study show that the younger generations of both communities use significantly more often the morphosyntactically simpler structure (2&4), and that this effect is amplified by a lower degree of language use at school. We argue that because Paamese and North Sámi have no shared ancestry and live in vastly different environment that our results are generalizable to the larger scale of highly inflected indigenous languages. More broadly, the results of this study suggest that language adapts to its (sociolinguistic) environment confirming the findings of previous studies using different methods (Nölle et al. 2020, Trudgill 2010, Nettle 2012).

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A corpus-based study of EGO CENTERED Motion Metaphors of Time in Modern Standard Arabic

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Keywords: Metaphors of Time, Deictic Reference, Corpus Linguistics, Motion Verbs, Prototypes and Categorization

Using a corpus-based methodology and a Cognitive Linguistics approach, this study looks at the distinction of Ego vs. speaker and Ego's now vs. the speaker's present in Ego-centered Motion metaphors of Time (EMT) as expressed by eleven COME and GO verbs in Modern Standard Arabic (MSA). To do so, it investigates three variables: 1. the syntactic-semantic and "deictic" composition of the verbs, 2. the 'Veridical' tense/ aspect system, and 3. properties of the EGO-CENTERED motion scenario. Generally known as expressions that describe temporal imminence using metaphorical spatial proximity (or distance) and using an Ego- perspective, EMTs are divided into Moving Time metaphors as in *Summer is coming* and Moving Ego metaphors as in *We are approaching summer*. Despite the attention they received in the last two decades, EMTs have mostly been analyzed for their metaphorical and grammatical components, while the deictic reference of the entity canonically termed 'Ego' is largely overlooked. On the one hand, this study builds on the literature on EMTs by providing a close analysis of Arabic as an understudied language system and by using a corpus-based methodology, thus highlighting the large scale of variability of the EMT constructions. On the other hand, it builds on the literature of MSA motion verbs: namely, the GO verbs (*ḏahaba* (go), *maḍā* (go), *adbara* (go), and *marra* (pass),) and the COME verbs (*ǧā'a* (come), *atā* (come), *qadima* (come), *iqtaraba* (approach), *danaa* (approach), *qaaraba* (approach), *aqbala* (arrive), and *Halla* (arrive)) by offering a classification based on their contexts of use in EMTs. To this aim, this study analyzed 1650 collected lines of EMTs by searching 33 different verb forms on ArabiCorpus and manually selecting 50 EMT lines for each verb form. In addition to the veridical tense and aspect information indicated by the search token itself, an analysis frame was used to manually annotate the corpus lines based on three main categories: 1) the type of EMT: Moving Time or Moving Ego, 2) the type of Temporal Entity used within the EMT construction (e.g. *summer, the elections, etc.*). Here three types are identified: calendric references (e.g. *Sunday, winter*), anchored events (e.g. *my birthday, the elections*), and non-anchored events (e.g. *better times, the future*), and 3) the type of the deictic experiencer based on the identification or distinction of Ego and the speaker. This category is divided into four subclassifications: personal experiencer as in *My graduation is approaching*, shifted experiencer as in *Her exam date is approaching*, collective experiencer as in *The elections are approaching*, and imaginary experiencer as in *The past refers to the time that has gone by*. The study concludes that the verb forms are not evenly distributed across the contextual variables which, in turn, highlights the idiosyncratic constructional properties of the motion verbs under study. Additionally, it provides data-driven insights on the variation of deictic categories across EMTs types.

Debunking the 'pure-future' myth: towards an entirely modal understanding of futurity in English

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Futurity, frame semantics, modality

The question whether futurity in English is a temporal or modal category or, relatedly, whether *will/be going to* are modals or future tense, is a much debated one. Most morphological (paradigms), syntactic (voice-neutrality, independent negation, sequence-of-tense) and semantic arguments (deicticity) for either position are contentious (Sarkar 1998; Palmer 1990: 160f.). One seemingly decisive argument for the temporal analysis is the alleged existence of 'pure-future' instances, which "merely express reference to future states of affairs, without any other significant connotations" (Brisard 1997: 275), (Brisard 2001: 259; Declerck 1984: 281). In this paper, I will argue for a modal account of futurity in English using a frame-semantic model (Fillmore 1976). Such an account is sensitive to the overlaps between modality and futurity: both are metaphysically indeterminate (Giannakidou & Mari 2018; Langacker 1987: 270), often expressed by the same constructions cross-linguistically (Bybee & Dahl 1989; Fries 1927) and share a basic deontic-epistemic-split in their subsenses (Nuyts 2006). I will demonstrate how such a model cannot only account for established futural senses (e.g. INTENTION, PREDICTION) but also for alleged 'pure-future' instances.

The model proposes that the main English future-time expressions (FTEs) express two distinct modal-futural conceptual structures/frames: intentional-directive and predictive-evaluative. The intentional-directive frame consists of a director intending for a future event to happen and an agent obligated to carry it out (~intention/deontic) (fig.1).The predictive-evaluative frame consists of a proposition about the future and an evaluator who evaluates the likelihood of this proposition (~prediction/epistemic) (fig.2).

I will argue that 'pure-future' instances fall into three categories (plan, modal matrices, determinate futures), each of which can be associated with one of the above frames:

(1) PLAN: Friday night **will be** a banquet at the country club patio and pool (Brisard 1997)

Plans seem to be pure-future because they express high degrees of certainty (Brisard 1997). Conceptually, though, they have an intentional-directive frame with a backgrounded director (fig.3). Although we do not know who planned the banquet, we know that someone did plan it and thus activate the relevant frame.

(2) MODAL MATRICES: If the lava **will come** down as far as this, we must evacuate houses immediately (Close 1975: 256 in Declerck 1984)

FTEs that scope under modal matrices ('if') are considered pure-future because the modal matrix provides the 'modality', and the FTE only indicates the time (Palmer 1990: 138). In my model, these modal matrices also represent frames with an evaluator but with a different evaluation-base (e.g. alethic possibility). In (2), the 'if' evaluator-substructure overrides the default evaluator-substructure of the predictive-evaluative frame in 'will': hence we have an evaluation in terms of alethic possibility instead of likelihood (fig.4).

(3) DETERMINATE FUTURES: Easter will be in April this year. (Nicolle 1998)

Determinate futures are often considered pure-futures because they seem completely determined by present circumstances (Palmer 1990: 137; Haegeman 1982: 141). In my model, these can be seen as logical deductions about the future which implies evaluation/inferencing by the evaluator. The evaluator does not know that Easter will be in April; they deduce it from other premises (similarly t o *If 1+x is 3, then 3+x will/is going to be 5*).

The paper shows that all major types of pure-futures can be shown to be modal by either implying direction (~deontic) or evaluation (~epistemic).

Figures

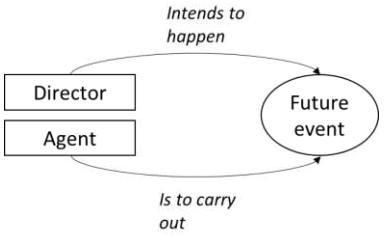

Figure 1: Intentional-directive frame

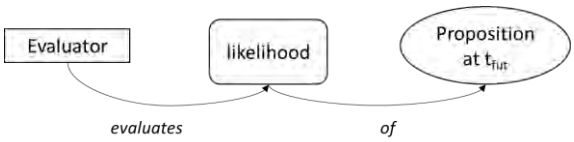

Figure 2: Predictive-evaluative frame

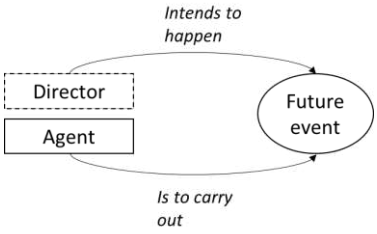

Figure 3: Plan frame

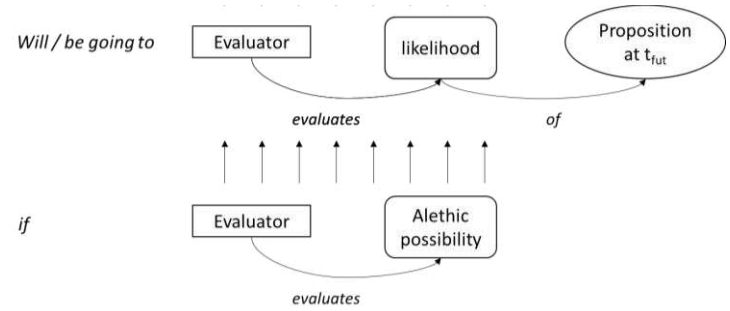

Figure 3: If override of predicitive-evaluative will

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Title.
Metaphor or Emotion: Image-based color associations among the senses of the Chinese color terms *hēi* 'black' and *bái* 'white'

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Keywords: Embodied cognition, Conceptual metaphor, Emotional valence, Image data

Regarding embodied cognition, concepts are fundamentally grounded and anchored in the simulations of actual perceptual experience (Barsalou, 1999, 2008; Glenberg, 1997; Gibbs, 2005). Perceptual information includes sensory-motor and emotional experience (Barsalou, 1999, 2008). Regarding the multimodality of embodied perceptual experience, this study explores how conceptual metaphor and emotional experience interact with each other when representing abstract concepts with regards to the metaphorical uses of the two earliest-acquired Chinese color terms (CTs) *hēi* 'black' and *bái* 'white' (Berlin & Kays, 1969; Wu, 2011).

Methodologically, an image-based visual corpus analysis approach (Guilbeault et al., 2020) was adopted in the current study, which can represent target terms (concept) as eight-dimensional vectors (color distribution) based on the color information extracted from their Google Image searching results. Such color distribution can simultaneously capture the metaphorical mappings and affective associations among cross-domain concepts. Focusing on twenty-four concepts in three types of semantic domains (Table 1), a dataset consisting of 2400 images (100 images for each concept) was collected from Google Image. Based on the dataset, we investigated the perceptual (dis)similarity between the twenty-two literal and metaphorical meanings of *hēi* 'black' and *bái* 'white', and the influence of emotional valence on the degree of their perceptual (dis)similarity with several statistical techniques. Precisely, it includes (i) general observation of their distributional pattern with *t*-distributed stochastic neighbor embedding (Figure 1); (ii) examination of their emotional valence with Correspondence Analysis (Figures 2 & 3); (iii) visualization of their perceptual (dis)similarity employing Correspondence Analysis and Hierarchical Agglomerative Clustering (Figures 4 & 5).

Regarding the empirical results, three major findings were obtained: first, the metaphorical meanings of both *hēi* and *bái* tend to carry stronger emotionality than their literal senses; second, although most metaphorical meanings of *hēi* and *bái* tend to share consistent emotional valence with their corresponding literal senses, valence inconsistency does exist regarding pairs of literal and metaphorical meanings of *bái*; third, perceptual congruity is found between the literal and metaphorical meanings of *hēi*, so is the case of *bái*, and the distinctiveness of such congruity can be influenced by whether the pair of literal and metaphorical senses have consistent emotional valence.

In short, the current study not only provides non-linguistic evidence for the conceptual mapping relations between the literal and metaphorical meanings of *hēi* and *bái* via depicting their perceptual congruity, but also reveals the important but limited influence of emotional valence on such perceptual congruity - we cannot predict the existence or distinctiveness of perceptual congruity between pairs of literal and metaphorical senses only based on whether they have consistent emotional valence. It is noted that the second finding partly contradicted the theories of embodied abstract semantics (Vigliocco et al., 2009; Kousta et al., 2011), which argued that emotional experience plays a greater role in representing abstract concepts than sensory-motor information. Hence, the present study may also shed new light on the issues pertaining to the role of emotional experience in representing and understanding abstract concepts.

(1). Terms pertaining to the literal meanings of *hēi* and *bái*				
	Black		White	
(2). Terms pertaining to the metaphorical meanings of *hēi* and *bái*				
hēi	Angry	Evil	Illegal	Network attack
	Sullen	Malevolent	Underground	Hack
	Slander	Secret	Unfavorable	Unexpected
	Entrap	Mysterious	Bad	Surprising

bái	Acceptable Approved	Clear Transparent	Clarify Express	Empty Blank
	Free of charge Cost-free	In vain For no reason	Inexperience Untalented	Lawful Legal
	Ordinary Unflavored	Pure Clean	Sorrowful Woeful	Undisguised expression
(3). Terms of affective polarity				
	Morality		Immorality	
	Positivity		Negativity	

Table 1: Search terms in three semantic domains. Note: The metaphorical meanings and their corresponding terms were identified based on the relevant previous studies (Wu, 1986; Xing, 2008; Li & Bai, 2013; Lai & Chung, 2018) and the Contemporary Chinese Dictionary (7th ed.).

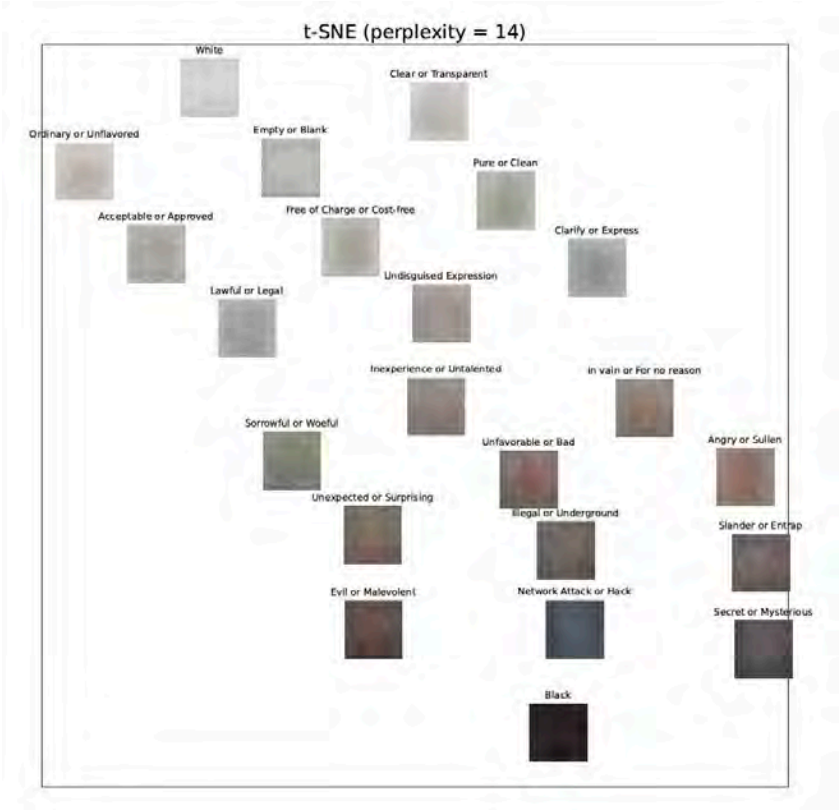


Fig. 1: t-SNE plots for color distribution data of the literal and metaphorical meanings of hēi and bái. Technically, meanings with similar color distributions would be neighbors with each other in this plot. The desired number of neighbors for each data point, perplexity, is set to 14 to get an ideal visualization of the t-SNE results. The data points were labeled with their corresponding search terms and colorgrams, defined as "a composite image produced by averaging the color value for each pixel across all images in a search term's image set" (Guilbeault et al. 2020: 5).

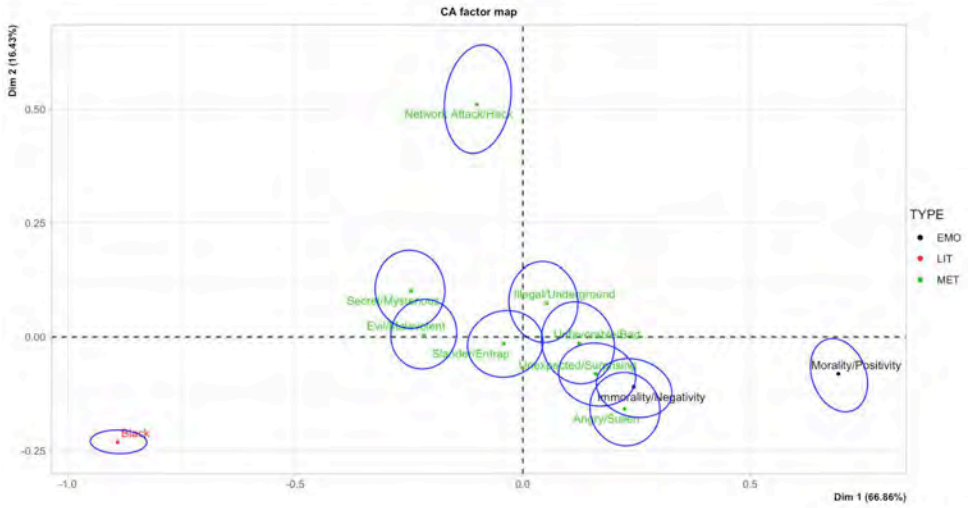


Fig. 2: Correspondence analysis (CA) biplot for the color distribution data of terms referring to the literal and metaphorical meanings of hēi, as well as the affective polarity. The positions of data points were predicated with 95% confidence ellipses. In a CA biplot, the smaller the proximity between two data points is, the stronger their association. A concept is regarded to be emotionally more positive if its corresponding data point has closer proximity with 'Morality/Positivity', while closer proximity with 'Immorality/Negativity' indicates negative valence.

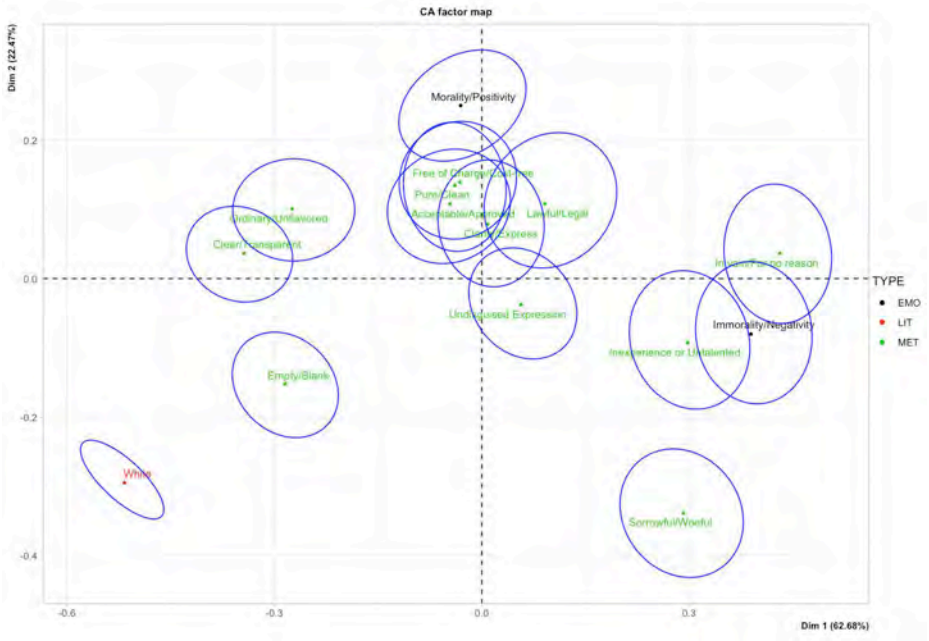
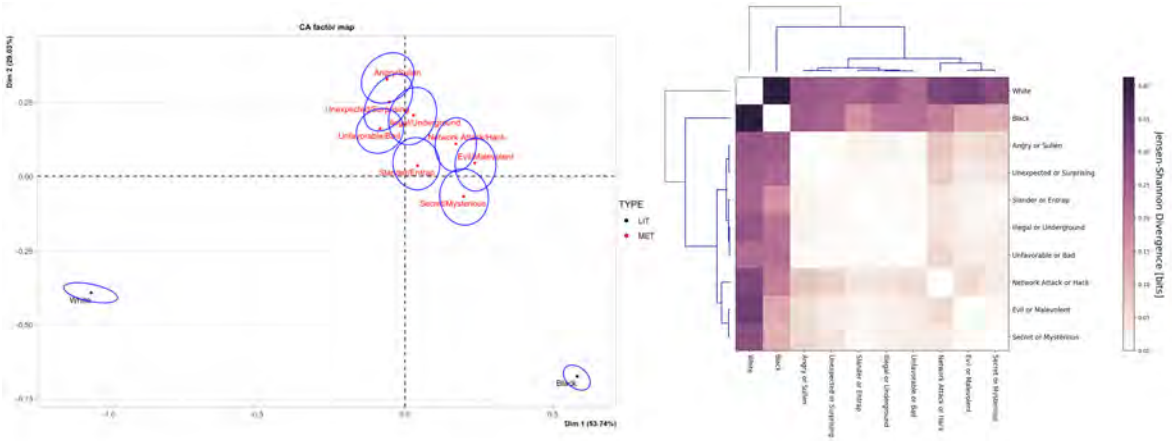
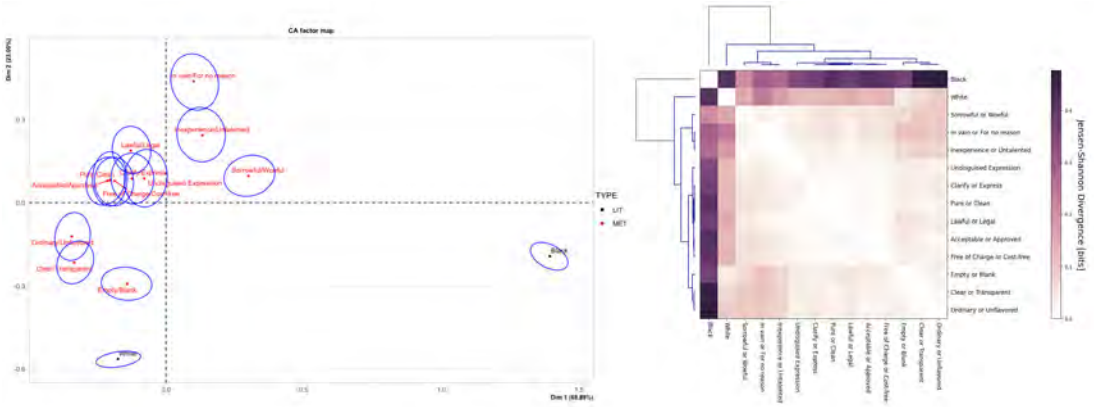


Fig. 3: Correspondence analysis biplot for the color distribution data of terms referring to the literal and metaphorical meanings of bái, as well as the affective polarity.



A **B**

Fig. 4: Correspondence analysis biplot (A) and clustering dendrogram (B) for the eight metaphorical meanings of hēi and the two literal meanings of hēi and bái. For (A), terms referring to literal meanings were colored in Black, while metaphorical meanings were Red. For (B), the clustering results were calculated with the ward method based on the distance matrix that consists of the Jensen-Shannon (JS: Guilbeault et al., 2020) divergency values between pairs of terms' color distributions. The clustering results were visualized as a dendrogram, and JS divergency values were represented as a heatmap. Lower JS values correspond to more similar color distributions in the perceptually uniform colorspace.



A **B**

Fig. 5: Correspondence analysis biplot (A) and clustering dendrogram (B) for the twelve metaphorical meanings of bái and the two literal meanings of hēi and bái

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Modeling a network of morphological constructions with locative prefixoids on a micro-, meso-, and macro-level.

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Keywords: Construction Morphology, prefixoids, constructional network, inheritance

This paper studies constructional idioms with locative prefixoids (e.g., *uplifting, downfall, overemphasize*) from a usage-based and cognitive Construction Morphology perspective (Booij 2010). I aim to make a first contribution of modeling a network of these morphological constructions with a particular focus on 'vertical' links between constructions at different levels of abstraction and 'horizontal' links connecting the antonymic *up-X* and *down-X* constructions. In this project I demonstrate the significance of both types of links to account for generalizations at different levels as well as novel and creative coinages.

'Vertical' links within the family of constructional idioms with locative prefixoids are productively accounted for by Traugott's (2008) concept of micro-, meso-, and macro-constructions. Based on Marchand's (1969: 109) claim that all locative prefixoids systematically function as adverbs, adjectives and prepositions in different complex words, I argue that positing a higher-level macro-construction with an unspecified slot for a locative prefixoid is merited. However, corresponding to their uses in isolation and in contrast to the functions of other locative prefixoids, prefixal *up* and *down* additionally have verbal properties in some complex verbs (*uproot, downskill*). Antonymic pairs of micro-constructions are therefore a conceivable level of granularity for a meso-construction.

For morphological constructions, much emphasis has recently been placed on the significance of sister schemas and 'horizontal' links as opposed to mother schemas and 'vertical' inheritance links (Norde & Morris 2018; Audring 2019; Jackendoff & Audring 2020). In this project I demonstrate that sister links motivate novel and creative instantiations by analogy such as the following from the Timestamped JSI Web Corpus 2014-2021 English (Bušta et al. 2017), which cannot be accounted for by the constraints of the mother schema:

(1) Back at the gala, 22-year-old Jessica Zraly sang Adele's eloquent if rather **downlifting** Water Under The Bridge accompanied by pianist and VMO composer in residence Trevor Hoffmann.
(http://vancouversun.com/health/local-health/town-talk-fashion-boost-for-pacific-autism-family-network)

(2) Florida rain falls in no fewer than three directions at once: there's down, and then the humid **upfall** from rain hitting the ground and hugging the ground in a low, impossibly humid fog, and then the random Brownian motion spirals in the air.
(http://www.sbnation.com/college-football/2014/11/25/7273447/florida-state-football-2014-season)

Both *downlifting* and *upfall* are creative coinages that violate the constraints posed by the construction, where the verb must either specify the same direction as the prefixoid (*uplifting, downfall*) or no concrete direction (*upcurved, downcurved*), thus eliminating the need for a mother schema. Here, the notions of second-order (sister) schemas (Audring 2019: 289) or paradigms based on affix replacement (Booij 2010: 31–36) are argued to have the most explanatory power to account for these creative coinages, but are too inclusive in other cases (?*downheaval, ?downroot*).

In a bottom-up approach, constraints of the constructional idioms *up-X* and *down-X* are first identified by means of data from the BNC and through collostructional analysis (Stefanowitsch & Gries 2003) and subsequently compared to determine whether positing an antonymic meso-construction or mother schema is merited based on recurring constraints. The JSI Web Corpus is examined for coinages by analogy that would indicate a predominance of horizontal links, establishing a paradigm or second-order schema. Finally, the results of the corpus study are taken as a basis for discussing the merit of the constructional network proposed in Figure 1.

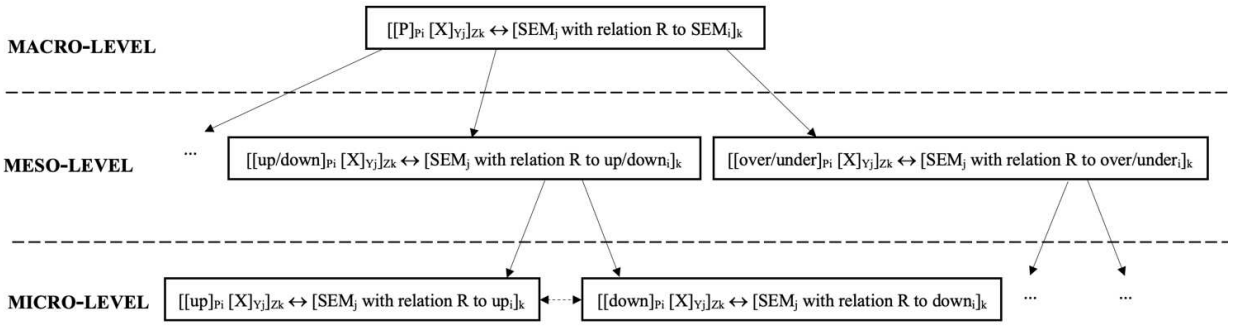

Fig. 1: Network of constructional idioms with locative prefixoids in the constructicon.

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A Usage-Based Study of Preposition Pied-piping and Stranding: Effects of Phrasal Frequency and Collocational Strength

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Keywords: Usage-based, Phrasal frequency, Collocational strength, Pied-piping, *Wh*-relative clause

In English *wh*-relative clauses, the placement of prepositions includes two options: preposition pied-piping (e.g., *Sam lost the credit card on which he relied*) and preposition stranding (e.g., *Sam lost the credit card which he relied on*) (Bardovi-Harlig, 1987). Pullum and Huddleston (2002, p. 629) proposed that the placement of prepositions in verb complement *wh*-relative clauses does not follow any simple rules, and "much depends on individual verb + preposition combinations". However, there has not been any empirical study that has investigated what properties of verb prepositions affect preposition placement.

From a usage-based perspective, the current study is the first empirical study that investigates how frequency and collocational strength of verb-preposition phrases influence adult first language (L1) and second language (L2) speakers' preference of preposition placement in English *wh*-relative clauses. Native speakers of Australian English (n = 20), Chinese-L1 learners at the intermediate level (n = 20, IELTS mean score = 5.8) and advanced level (n = 30, IELTS mean score = 7.3) of English proficiencies completed a sentence completion task (e.g., *Zoe learned a lot from the newspaper* _____. (Items: *she, which, to, subscribed*)) and an acceptability judgment task. Both tasks adopted a 2 verb-preposition string frequency (high vs. low) × 2 verb-preposition collocational strength (high vs. low) Latin-square factorial design. Sample task stimuli are in Table 1.

The results showed that L1 and L2 speakers had an overall preference for preposition stranding in sentence production and acceptability judgment. Native speakers had a stronger acceptance of preposition pied-piping than non-native speakers; advanced learners had a stronger acceptance of pied-piping than intermediate learners. Such results align with the usage-based prediction of speakers' sensitivity to input distribution (Ellis et al., 2008). Stranding occurs much more frequently than pied-piping across all clause contexts (Hoffmann, 2011). Therefore, stranding is more entrenched in adult L1 and L2 speakers' linguistic repertoire than pied-piping. Furthermore, L1 speakers had a stronger sensitivity to the conditional relative frequency (Jach, 2018) of preposition placement specific to *wh*-relative clauses compared to non-native speakers, and the more advanced learners stronger than the less proficient learners.

The collocational strength of verb-prepositions had a significant effect on the productive use and acceptability of preposition placement for both L1 speakers and advanced L2 learners. Intermediate learners' preposition placement was more affected by phrasal frequency. The findings show that English speakers' placement tendency can be well predicted by their sensitivity to the very localised lexical dependency of the verb and the preposition. The higher collocational strength a prepositional verb has, the more entrenched it is in the mental lexicon as a single unit (Wray, 2002), and the more likely stranding is preferred. The finding on proficiency aligns with previous research on formulaic processing which shows how native speakers and advanced learners rely on implicitly extracted distributional information of form-function and form-form associations, while less proficient L2 learners rely more on raw frequency in formulaic processing (Ellis et al, 2008). The current findings provide strong support to the usage-based account of grammar analysis and grammar acquisition.

Stimuli condition	List A	List B
High frequency, high collocation strength	Sam lost the credit card which he relied on.	Sam lost the credit card on which he relied.
High frequency, low collocation strength	Jenny got the job for which she applied.	Jenny got the job which she applied for.
Low frequency, high collocation strength	Josh can hardly recognise the car with which he collided.	Josh can hardly recognise the car which he collided with.
Low frequency, low collocation strength	Addison likes to go to the football matches which she bets on.	Addison likes to go to the football matches on which she bets.

Tab. 1: Sample test stimuli

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How children and adults use metaphor to reason about time, number, emotion, and music

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Keywords: metaphor, abstract concepts, language learning, cognition

Metaphor has been shown to play a key role in how adults reason about time, number, emotion, and music. However, less is known about how children employ metaphor when reasoning about these concepts. Research into children's use of metaphor to reason about time and number has taken a primarily quantitative approach (e.g., Lourenco and Longo, 2010), and there have been no studies of how children use metaphor to reason about emotions or music. To gain a deeper understanding of the development of these abstract concepts, we conducted a qualitative and quantitative investigation into the ways in which children aged 5–8 (N = 99) and adults (N = 69) in England employ metaphor to reason about time, number, emotion, and music.

For time, number, emotion, and pitch, we followed a procedure similar to Tversky et al. (1991) in that we asked participants to place stickers depicting different life stages (Task 1), different numbers (Task 2), different emotions (Task 3), and different musical notes (Task 4) on a piece of paper to show how they thought the different prompts related to one another. To explore the metaphors that the participants used to reason about two other musical features (articulation and tonality), we asked them to draw pictorial representations illustrating the differences between staccato and legato sequences of notes (articulation) (Task 5), and major and minor chords (tonality) (Task 6). We conducted qualitative analyses to identify whether metaphorical mappings were depicted in these drawings. For each of the six tasks, we interviewed participants about the reasons for their choices, leading to the creation of a 170,000-word corpus.

Our findings indicate that there are substantial differences between how children and adults use metaphor to represent time, number, emotion, and music, and in the explanations that they provide when doing so. On both the number task and the time task, the children demonstrated a strong preference for the horizontal axis when depicting numbers of increasing magnitude, whereas the adults were more evenly split between horizontal and vertical responses. In the domain of emotion, both children and adults used the horizontal axis to depict increasingly positive emotions. In the pitch task, the children were less likely than the adults to position the stickers vertically to reflect differences in pitch. Our analysis of the interview data revealed that, across the different tasks, the children had a stronger tendency than the adults to produce cross-sensory metaphors, personify the stimuli, relate tasks to their own lived experiences, and motivate their responses using narratives. By contrast, adults produced more schematic representations. Qualitative differences were observed in the ways in which children and adults referred to visual patterns, cultural phenomena, iconicity, and emotions. Responses varied according to the age of the children and the task type. These findings provide new insight into how children use metaphor and other, related mechanisms to reason about abstract concepts, how this reasoning differs from that of adults, and how it develops over the first three years of formal education in England.

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The Effect of L1 on the Acquisition of English Alternating Unaccusative Structures by Moroccan EFL learners

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Keywords: acquisition, influence, morphology

The influence of L1 structure across the languages of a bilingual has been the target of research by linguists who seek to understand how language and cognition affect each other, including the linguistic relativity hypothesis. The present study investigates the effect of L1 on the acquisition of English alternating unaccusative structures by Moroccan EFL learners. These structures consist of verbs that can yield transitive and intransitive sentences (e.g., the child broke the window; the window broke). A contrastive analysis of such structures in both English and MA reveals that, just as in English, there are structures in MA in which the morphemes marking the causative alternation are not realized overtly, and therefore, the theme occupies the subject position (e.g., ṣ-ṣbaġa nəʃfat; literally: Def-painting dried). Nevertheless, some other English alternating structures (the door closed) can only have passive equivalents in MA (e.g., l-bab t-sed; literally: the door was-closed; hence, the ungrammaticality of '*l-bab sed'; literally: the door closed). Thus, it is hypothesized that Moroccan learners of English may not face acquisitional problems with respect to English unaccusative structures that are similar to their mother tongue, but they may fail to recognize the grammaticality of English alternating unaccusatives that do not have equivalents in their native language. To verify this hypothesis, two instruments are used: a grammatical acceptability judgment task and a translation task submitted to two groups of Moroccan learners of English: Freshmen and master students. The results revealed that the role of L1 (MA) was detected in the acquisition of ergatives due to negative transfer from L1. Based on these results, a number of pedagogical implications are suggested to help learners acquire relevant English ergative constructions.

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The Danish Sign Language sign ÆGTE ('genuine') and its functions as a marker of intensification, epistemic modality and subjective emphasis

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Keywords: diachronic pathways, subjectification, epistemic modality, intensification

In recent years sign linguists have become increasingly interested in the origins of grammatical elements in signed languages. Most signed languages have a short history, at most a couple of hundred years, and the data from earlier stages of the languages are sparse, mostly dictionaries or word lists with drawings of signs (see, however, Wilcox 2009). An alternative to tracing the origins in earlier stages of the languages is internal reconstruction, i.e., hypotheses about pathways based on analyses of polysemy of the current forms of the languages (e.g., Xavier & Wilcox 2014, Pfau & Steinbach 2011). In this study, the focus is on the polysemy of the sign ÆGTE 'genuine' in Danish Sign Language (DTS) as it appears primarily from corpus data from the DTS dictionary (https://tegnsprog.dk), supplemented with discussions with native signers.

ÆGTE is derived from the sign of the letter Æ in the DTS hand alphabet. In spoken Danish the word meaning 'genuine', starts with the letter *æ* in its written form, which leaves no doubt about the origin of the sign form. However, the sign has functions that are excluded for *ægte* in spoken Danish. Thus, the polysemy of ÆGTE appears to have developed independently of the majority language.

ÆGTE may be used as a noun meaning 'reality' in contrast to 'phantasy':

(1) topicalized enumeration
MANY CHILDREN / PHANTASY **ÆGTE** UNCLEAR /
'For many children the difference between phantasy and reality is unclear.'

As a predicate or a lexical modifier ÆGTE may mean 'genuine' and 'true':

(2) reference check negated
ALL JEWELLERY SHINY / MY MOTHER POSS$_h$ / **ÆGTE** / FALSE /
'All my mother's diamond jewellery is genuine, it's not fake.'

(3) topicalized
ÆGTE STORY / ONE ADDICT / THROW OFF BUS MOTOR WAY BY PEDAGOGUE /
'It's a true story. An addict was thrown off a bus on the freeway by a pedagogue.'

In (4) ÆGTE is used as an intensifier, modifying a predicate:

(4) topicalized
YESTERDAY / I SEE AMUSING MOVIE / **ÆGTE** AMUSING /
'Yesterday, I saw a funny movie, it was really funny.'

ÆGTE with an epistemic meaning ('really, in reality') may have scope over the proposition when there is a contrast with some other situation.

(5) HOW-FUNNY WEATHER MOUNTAIN / BE-CALLED WEATHER MOUNTAIN /
'Imagine, it is called Sky Mountain!

ÆGTE ONLY HILL / PALM-UP /
It's really only a hill.'

In dialogues ÆGTE is used to elicit verification of a proposition ('Really?') and to support the proposition in the response ('Indeed!').

Finally, ÆGTE can be used subjectively to emphasize speaker meaning (cf. Paradis 2003).

(6) **ÆGTE** I STRONGLY-DISAPPROVE$_{mr}$ GRANDMOTHER PT$_{mr}$ SELL WARM HOUSE /
'Indeed, I strongly disapprove of grandmother having sold the cottage.'

Somewhat similar polysemy of words meaning 'genuine' or 'true' has been found in English (*real, really*, Paradis 2003; *very*, Breban & Davidse 2016) and German (*echt,* Ørsnes 202). In my talk I shall present the hypothesized diachronic path of ÆGTE and interpret it within Langacker's (1991) and Traugott's (1995) notions of subjectification.

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Many Paths Toward One Complex System: The Acquisition of Continuous and Discontinuous Constructions in the Yucatec Mayan Deictic System

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Keywords: Yucatec Maya, Deictics, Grammar Acquisition, Noun Morphology, Construction Grammar

Yucatec Mayan, an understudied language spoken in southeastern Mexico, has a highly complex deictic system, consisting of four bases (*je', le, te, bey*) and four enclitics (*a', o', ti', e'*) that combine continuously, with the insertion of an epenthesis between elements, e.g., *lela'* ("this one"), and discontinuously, with a noun or noun phrase between elements, e.g., *le paal a'* ("this child"). The possible combinations of bases and enclitics form unique expressions. The aim of this study is to analyze the route children follow in combining bases and enclitics in early language acquisition. It is a corpus-based study of the speech of four monolingual children (1;01;12-3;05,24) and the input directed to the oldest child; two of the databases analyzed are longitudinal and one is cross-sectional. We find that the acquisition of this deictic system is the outcome of a process in which elements are added gradually, consistent with a constructivist approach (Lieven et al., 2003, 2009). In the first phase of development (1;01,12-1;07), the child produced either the beginning or the end of a continuous construction, e.g., goal = *lela'*, child production = *le* or *la'*. In the second phase (2;03-2;07), children used either a base with a noun, e.g., *le (x)ch'u(pal)* ("the girl"), or a noun with an enclitic, e.g., *ba'axel- a'* ("toy here"). In the last phase we found adult-like discontinuous constructions as noun phrases inserted in more complex sentences. Our data shows (1) that continuous and discontinuous constructions follow different routes, in which continuous constructions precede discontinuous ones in children's first use of deictics; and (2) that children are not initially learning a specific lexical schema, such as *le* X-*a'*, (equivalent to "he's X-ing") in the development of the discontinuous construction, but seem to trace two simultaneous but different paths guided by input clues: one in which they first identify that a base precedes an NP and another in which they identify that enclitics occur after an NP. Since what seems to remain constant in development is the NP, attached both to the initial base and the final enclitic, we hypothesize that the analogy with the NP is what allows children to put the pieces together. Further research is required to prove this hypothesis. In general, our observations fit a constructivist approach to language learning that provides new insights into language acquisition in a non-European language.

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Subject-Object Switching in Etulo: A Cognitive Approach.

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Keywords: Subject-object switching, Experiential verbs, Construal, Etulo

This paper investigates the phenomenon of subject-object switch (SOS) in Etulo, an Idomoid language of Niger-Congo family spoken in Nigeria. SOS construction is a type of construction in which the subject and object of the verb can switch positions without a conspicuous change in the meaning of the sentence. SOS constructions are not peculiar to Etulo. They have been attested in other African languages such as Igbo (see Uwalaka 1988, Uchechukwu 2007). In Etulo SOS constructions are linked to experiential verbs such as *kɪɔ ɪtɪŋga* 'be angry', *kwɔ okwɔ* 'cough' *wo imio* 'be afraid/frightened', and *dɔ otse* 'be sick'. Etulo constructions involving experiential verbs such as ***Anɪ*** *le kwɔ* ***okwɔ*** and ***okwɔ*** *le kwɔ* ***anɪ*** 'I am coughing' have the same propositional meaning but involve a subject-object switch. This paper therefore, explores the Etulo experiential verbs in SOS constructions and accounts for the orientation or contexts that predetermine the choice between the alternating sentence pairs. Within the Cognitive approach, two grammatical possibilities for expressing the same situation are assumed to encode different ways of construing that situation. In this work, the theoretical concept of construal is used to account for the alternating expressions associated with the Etulo SOS constructions. Construal is a multifaceted cognitive approach that accounts for changes in how a scene is perceived (see Langacker 2008, Evans 2019). The human experience could be so rich that there is no one single way to represent a situation, and the desire to give prominence to certain aspects of a situation could necessitate the adjustment of the focus of attention in a construction, such that the mental imagery associated with a situation is altered. This is the case of SOS constructions in Etulo. The data for this research are obtained from native speakers of Etulo via elicitation using a structured questionnaire on experiential verbs. In addition, context based data are obtained via natural recordings of narratives and conversations centered on experiential verb based themes.

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Unexpected Abstract to Concrete Metonymies in Corpus

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Keywords: metonymy, abstract concepts, into relations

Cognitive linguists have long argued that our understanding of abstract concepts is grounded in metaphoric or metonymic mappings from more concrete or familiar domains of experience (Lakoff and Johnson 1980/2008, Lakoff and Johnson 1999). The relation between the abstract concepts of reality and insanity in sentence 1 is a case in point. It is understood as a line that blurs into another abstract concept, that is, into nothingness (i.e., into 'the quality or state of being nothing').

1) … the line between reality and insanity blurs into nothingness. (COCA, our emphasis)

Uses such as these are in line with understanding abstract concepts (a relation) as concrete ones (a line), MOTION as CHANGE, and abstract concepts (nothingness) as bounded entities that something can develop into. In 2, however, nothingness is not used in reference to an abstract concept, but to a space that a flashlight drops into:

2) Her feet dangled in the air over the dark emptiness below, her flashlight dropping into nothingness. (COCA, our emphasis)

Uses such as these are quite unexpected. Here the abstract concept of nothingness is used metonymically for the perceived quality of the space that a flashlight drops into, and this quality, in turn, metonymically for the real-world physical space involved. But how common are uses such as these in authentic data? Are other abstract concepts similarly used as sources in metonymic conceptualizations and are there similar ABTRACT FOR CONCRETE instances of nothingness in usage-based data? These are the research questions dealt with here.

To investigate abstract concepts in a systematic way, we did a semantic analysis of the usage patterns of the abstract nouns that collocate with the preposition into. The study is based on data from the Corpus of Contemporary American English (Davies 2008), which then consisted of more than 560 million words of text from several genres (i.e., spoken, fiction, popular, magazines, newspapers, and academic texts), and a previous study of the 100 most frequent nouns that collocate with into (the present authors, submitted). Our aim was to map out the metonymies that structure into + abstract noun constructions in authentic data and to gain a better understanding of such uses. Results suggest that several abstract concepts besides nothingness are used as sources in metonymic mappings. Some of them are darkness, daylight, obscurity, eternity, compliance, submission, and oblivion. More generally, results emphasize the need for usage-based approaches to language modeling. ABSTRACT to CONCRETE mappings are far from uncommon in authentic data, and abstract concepts may indeed be used as sources in metonymic mappings.

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Johansson Falck, Marlene, & Lacey Okonski. (under review) Metaphorical and Non-Metaphorical Meaning from Real-World Spatial Relations.

The mutualistic organization of sister constructions: an ecological network approach to the structure of the constructicon

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Keywords: constructional network, nestedness, Zipf's law

The network of constructions (or constructicon) is hierarchically organized in a way such that sister constructions can be related under an over-arching construction, a higher node of abstraction and schematization (Sommerer & Smirnova, 2020; Sommerer & Baumann, 2021; Sommerer, 2022). This is for instance the case with the 'obstruction' construction [*BE* {*prevented*/*kept*/etc.}] *from* {V_{ing}}], where each form of the first paradigmatic schema defines a sub-construction, e.g. [*BE prevented from* {V_{ing}}]. These sister constructions can be highly synonymic, so much that the question of their co-existence arises, since these constructions compete against each other for the same set of fillers (Aronoff & Lindsay, 2016; Rainer, 2018). This creates a bipartite network between the sister constructions and their fillers, characteristic of a situation where two different sets of forms engage in filler/host mutualistic interactions (Chen, 2022). Such filler-slot relations are also deemed central for the understanding of the emergence of grammatical classes (Diessel, 2019).

This mutualistic bipartite structure is typical of many systems – e.g. relationships with users and web pages, pollinators species and flowers, companies and traded goods, etc. (Jordano et al., 2006; Brintrup et al., 2015; Mariani et al., 2019). All these systems do not follow a niche-based structure, but a nested one (the most obscure web pages are only visited by the most prolific web users, while the occasional surfers only visit commonplace pages). This nested structure actually derives from a Zipfian distribution over the nodes' degree (Payrató-Borras et al., 2019). The Zipfian distribution is a mathematical law that can be invoked to describe a constructional schema structure (Ellis & Ferreira-Junior, 2009; Ellis, 2012; Ellis et al., 2014): it relates, in logarithmic scale, the collocational frequency of a construction's fillers, and their rank (once ordered by their collocational frequency), such that a few fillers account for most of a construction's use (Goldberg et al., 2004). Therefore, we should expect the sister constructions to obey nestedness as well (Petré, 2014, p. 49-50). This nested structure would be associated with mostly hyperonymic relationships between sister constructions, frequent generalist constructions being semantically more versatile, rare constructions being specific to a chosen subset of the semantic domain covered by a more generalist construction.

I empirically show that two-slot constructions obey a nested structure from three datasets obtained from the COCA (Davies, 2008-): the obstruction construction mentioned above, the mental stative verb + V_{ing} construction ([{*love*, *consider*, *remember*, etc.} + {V_{ing}}], and the [*it is* {*crucial/misleading*, etc.} *to* {V_{inf}}] construction (Desagulier, 2021) Crucially, although the structure is robustly nested, I also show that these systems are significantly not as nested as they could be (if, for instance, one were to reallocate randomly all tokens while keeping the construction's frequencies constant), hinting at some allotment of distinct semantic domains among the most prominent fillers.

Finally, I discuss the interpretation of this finding. The lack of rare sister construction/rare filler interactions seems crucial for the construction to be recognized as such in actual use. Second, as shown in the ecological literature (Bastolla et al., 2009), the nestedness structure provides stability to the system (i.e. to the over-arching node), despite the competition between sisters. Furthermore, the hyperonymic relationships may lead to bleaching the meaning of the most dominant filler, favoring a more abstract and schematic meaning to emerge. As such, nestedness may be one of the very tools for grammatical structures to arise out of language use.

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Cognitive and functional motivations in the productive schema[[X]$_N$ -ar]$_V$ in Brazilian Portuguese: the “sextar” construction and its analogous lexical instantiations

The lexicon of a language is innovated naturally, and this assertion is not new in Linguistics. When a word is incipient in the vocabulary of a language or is perceived by speakers as novelty, it is considered a neologism (ALVES, 1994). This work investigates the neologism “sextar” and lexical constructions emerging from analogies of it in Brazilian Portuguese, as “sabadar”, “domingar”, “segundar”, “feriadar”, “dezembrar” and “trintar”. Literally, these verbs mean ‘to Friday’, ‘to Saturday’, ‘to Sunday’, ‘to Monday’, ‘to Holliday’, ‘to December’, and ‘to thirty [years old]’; that is, these neologisms are verbs formed with names of time frames, originally expressed as nouns. The morpheme -ar, recurrent in these structures, is characteristic of verbal forms. In our analysis, we adopt a Construction Grammar perspective, mainly based on Croft (2022), and also supported by Booij (2010) and Gonçalves (2016). The objective of this research is to find functional and cognitive motivations for the need to innovate the lexicon by converting the name of a time frame into a verb. Based on the notion of information packaging of Croft (2022) — a functional category which is part of a construction’s function, together with the semantic content — our hypothesis is that this schema is motivated by the predication information packaging, contextualized by a discursive need to express actions performed in a specific time frame. We collected data from social networks (Facebook, Twitter and Pinterest), memes/quotations websites, and online dictionaries by freely browsing through the indicated sites and by inserting desired entries in search fields (Table 1). The collected data were classified in terms of the theoretical precepts presented, compared, and semantically related, by lexical network and field, to confirm the existence of analogies and the items’ instantiative/schematic nature. Two productive schemas applicable to “sextar” and its analogies emerged from the analysis: [[X]$_N$ -ar]$_V$ ~ ‘To celebrate time period X’; and [[X]$_N$ -ar]$_V$ ~ ‘Time period X has come’. We concluded that the emergence of this construction is based on a discursive need that involves three fronts: semantic, of keeping the same temporal concept described by the base; pragmatic, of packaging a semantic information to attribute to it a predication character, instead of reference; morphosyntactic, of applying verbal inflectional paradigms according to the construction’s function. Thus, the hypothesis was confirmed: information packaging acts as a key to motivate the productive schema [X-ar] applied to “sextar”, because the way the semantic information is used — packaged — entails changes that echo by all dimensions of the construction, in its functional and formal aspects. Additionally, both in the “sextar” construction and its analogous constructions, there is more than the meaning of transforming the name of “time period X” into an action: the speakers consider what action is performed, or what is expected to be done, in this “time period X”. There is a dependence on encyclopedic knowledge about this time frame, based on the cultural and social experience of the speakers, and only through these functional motivations, the concept is apprehended in cognition and actualized properly in language.

Keywords: Construction. Construction Grammar. Lexicon. Morphology. Neologism.

Table 1: List of lexical constructions analyzed

Reference Image	Construction X-ar	Text	Source/Link	Access
1	sextou	Sextou! [...]	SEXTOU... (2022)	1 dec. 2022
2	sextou, sextarei	sextou, mas desconfio q não sextarei	DOCE COMO LIMÃO (2022)	1 dec. 2022
3	Sextou, sextarás	"NÃO É PORQUE SEXTOU, QUE TU SEXTARÁS"	DICIONÁRIO POPULAR (2022)	30 nov. 2022
4	sextar, sabada (sic), domingar	queria entender esse povo q não trabalha e tem dinheiro pra Sextar Sabada Domingar [...]	IFUNNY (2018)	26 nov. 2022
5	sextou, sabadou, domingou, segundou	sextou sabadou domingou segundou	IFUNNY (2020)	25 nov. 2022
6	Trintei	DE REPENTE OU NÃO TÃO DE REPENTE: TRINTEI!	50 FRASES... (2022)	1 dec. 2022
7	Dezembrou	Dezembrou [...]	MIMOS DE NÓS (2020)	1 dec. 2022
8	feriadou	#FERIADOU [...]	BOTECO DO TALA (2021)	1 dec. 2022

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Continuous reframing: cognitive linguistics meets experimental poetry

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Keywords: framing, conceptualization, poetry, experiment, language

The paper discusses a little-known episode of direct contacts between cognitive linguistics and experimental poetry. The 1960-70s was, in the United States, an era of the so-called "linguistics wars" conducted between representatives of generative grammar and cognitive semantics. In the wake of these linguistic debates, poets of the 'language school' were involved into "poetic wars" between traditionalists and avant-gardists. George Lakoff, who gained prominence as a cognitive linguist in the 1980s, published a series of polemical articles in which he discusses the value of the "language movement" in poetry and its proximity to the strategies of cognitive linguistics. Lakoff focused on the issue of "framing" and "reframing" knowledge in language. "Language poets" and cognitive linguists had in common the focus not only on metaphor as an operator of thinking, but also on language as a mediator between cognition and aesthesis, between experience and consciousness, between the poetic and metalinguistic functions of language.

Building upon Lakoff's considerations about the nature of 'framing' in experimental poetry, we will analyze examples from American language-centered poets (Michael Palmer, Charles Bernstein, Barrett Watten) from the perspective of metalinguistic framing, i.e., cases where linguistic concepts themselves function as metaphorical fields structuring poetic experience. For instance, Charles Bernstein dedicates some of his poems to the cognitive framing of language: *Imagine poetry as a series of terraces, some vast, some no bigger than a pinprick, overlooking the city of language. The sound and light show begins in the dark: sentences dart by, one by one, forming wave after wave of the rag and bone shop of the quotidian, events passing before our eyes like the faint glimmer of consciousness in an alcoholic stupor. Facts, facts everywhere but not a drop to drink*. Metaphor, for Bernstein, is often conceptual, i.e. does not simply connect two dissimilar entities, but connects them in the act of thinking and in the act of writing itself. Similarity as the basis of ordinary metaphor is questioned. The metaphor here is built as a parataxis: *the blame is like the blame / the guilt is like the guilt / the quilt is like the quilt / the blank is like the blank / the end is like the end / the loop is like the loop / the there is like the there / the here is like the here / the how is like the how / the now is like the now*. The poetic function of language, foregrounding the message as such, lays bare the structure of the conceptual metaphor itself.

In Language Poetry, language itself, as well as particular linguistic categories, are conceptualized and categorized, as in this fragment from the poem by Michael Palmer "Notes for an Echo Lake": *An eye remembers history by the pages of the house in flames, / rolls forward like a rose, head to hip, recalling words by their accidents*. The syntax here is quite coherent at the local level, but the meanings and images are layered on top of each other, moving from one frame to another. In another poem by Palmer (*Someone identical with Dante / sits besides a stone. Enough / is enough is enough of. / It's odd that your hand feels warm / (snow carefully falling*), the syncopated construction *enough is enough of* actualizes the frame of frustration, interspersed with the frame of the very syntax of speech, as well as with the framework of the idiom "Enough is enough". The poetic line switches the frames with its unique structure, it frames, deframes, and reframes the frames themselves. The borders between frames as areas of experience in consciousness are foregrounded in a poetic utterance. George Lakoff called this process of self-reflexivity in language-centered poetry a "continuous reframing" [Lakoff 1982]. In this paper, we will analyze, from the perspective of contemporary cognitive poetics, how and to what extent experimenting with language in poetry may challenge the procedure of conceptualisation as a linguistic mechanism.

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The emergence of multimodal grammatical construct(ion)s through pointing gestures

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Keywords: pointing gestures, multimodal construct(ion)s, argument structure, construction families

This contribution is situated at the crossroads between the paradigms of interactional and cognitive linguistics, from where it focuses on pointing (or deictic) gestures as a crucial semiotic resource for the multifaceted interpretation of a usage event. Accordingly, the overall objective of this paper is to demonstrate how pointing gestures may actively contribute to the multimodal realization of grammatical construct(ion)s. The empirical basis for this qualitative study is a corpus of two plenary debates in the Flemish Parliament, of which four video excerpts will be analyzed more closely.

It is generally accepted that pointing gestures cannot be categorized as mere reference markers (Kita 2003). Several studies have convincingly shown that these gestures may occur with many formal variations as well as in multimodal co-occurrences (Fricke 2007; Ladewig 2020). Mondada (2014) demonstrates that pointing gestures are dynamically adapted in function of different socio-material circumstances and interactional recipients whereas the dialogue-based account of Ginzburg & Lücking (2021) elaborates the existing semantic taxonomy of pointing gestures by four types of addressee pointing.

The present contribution will demonstrate by video excerpts taken from the corpus and transcribed as in the following examples (our translation), how pointing gestures may play a decisive role in the multimodal realization of a ditransitive construction (example 1), an argument structure underlying an attributive participle (*shared* in 2) and, finally, in the realization of a parenthetical construction. The underlined elements in these transcriptions mark co-occurrence with a pointing gesture.

(1) …a lot of questions have been asked here…
(2) …because I think that is a shared concern…
(3) … because (--) government investments also have a positive effect…

In (1) the speaker uses both hands to point at himself, thus indicating that all questions have been asked to him. In doing so, the gesture clearly impacts the syntactic organization of the argument structure as it provides a perfect realization of a multimodal ditransitive construction. In (2) the speaker points at herself and the previous speaker thus identifying two referents of the argument structure of the underlying verb ‘share’, which factors into the specific pragmatics of this utterance. In (3), during a short pause following the Dutch conjunct ‘want’, the speaker points to the previous speaker thus expressing a multimodal realization of the parenthetical construction along with a clear impact on the discursive and the pragmatic organization of the usage event.

Our focus on the integration of pointing gestures along with locally situated aspects of interaction in grammatical construct(ion)s may feed into a new debate about a) the status of non-verbal and multimodal structures within construction networks (Diessel 2020: 12; Zima 2014; Schoonjans et al. 2015; Bergs & Zima 2017), and b) the relative status (in terms of prominence) of different types of formal information (verbal vs. gestural) within a construction. With regard to the c) semantic pole of a construction, the integration of pointing gestures raises the cognitive linguistic issue of objective vs. subjective construal as a highly relevant and refining, but hitherto largely ignored dimension on the CxG agenda.

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The 'principle of no synonymy' and light verb constructions – A case study on German stative light verbs

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Keywords: light verb constructions, synonymy, corpus linguistics

A central principle in, for instance, Construction Grammar is the avoidance of strict synonymy (e.g., Goldberg's 1995, 67 'Principle of No Synonymy'). The basic idea is: if two (complex) expressions are syntactically distinct, they must be semantically/pragmatically distinct as well. German light verb constructions (LVCs) provide an interesting test case for this principle. LVCs consist of a semantically light verb (LV) and a phrasal element, e.g., a PP (1). The main predicational content is provided by the phrasal element.

(1) *unter Beobachtung stehen*
under observation stand
'be under observation'

There is consensus in the literature (e.g., von Polenz 1987; Eisenberg 2013 that LVs contribute to the complex predicates aktionsart in contributing such features like 'causation', 'inchoation' and 'causativity'. LVs are subdivided into three general semantic classes depending on their specific semantic contribution: causative (e.g., *geben* 'give', *stellen* 'put'), inchoative (e.g., *kommen* 'come') and stative (e.g., *stehen* 'stand', *sein* 'be'). If the LVs' semantic contribution would consist only of the mentioned aktionsart features, the LVCs in (2a) and (2b) should be synonymous. The two only vary with respect to the LV and denote the same type of situation: the subject referent is under someone's control.

(2) a. *unter jemandes Kontrolle stehen*
under someones control stand
'be under someone's control'

b. *unter jemandes Kontrolle sein*
under someones control be
'be under someone's control'

Whether two complex expressions are synonymous or not, cannot directly seen from corpus data. Therefore, we investigated the selectional restrictions of the two LVCs. Our hypothesis is: if the two LVCs are synonymous, we should not find any significant differences in their selectional restrictions. If, on the other hand, significant differences in the selectional restrictions exist, they should be related to the LC's meaning (since this is the only morphosyntactic difference between the two LVCs).

We used the two LVCs in (2) as a case study and searched for them in the German Reference Corpus DeReKo (Archiv W; Leibniz-Institut für Deutsche Sprache 2021). We followed the procedure described in Fleischhauer (2021) for identifying German LVCs within corpus data. After having compiled a list of 500 instances for each LVC, we annotated the semantic type of the LVCs' subject arguments. The results of the annotation are shown in table 1. The differences in the choice of subject arguments is statistically significant.

	sein	***stehen***
animate	18 (3,62%)	54 (11,04%)
concrete	110 (22,13%)	241 (49,28%)
abstract	62 (12,47%)	173 (35,38%)
eventive	308 (61,97%)	21 (4,29%)

Tab. 1: Results of the annotation of the semantic type of the subject arguments.

The results show that the LVCs differ in their selectional restrictions and therefore do not qualify as strict synonyms.

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A corpus-based study on putative synonymous light verb constructions in German

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Keywords: light verb construction, synonymy, corpus study, aktionsart

Light verb constructions are complex predicates consisting of a semantically light verb and a phrasal element (either an NP or a PP). It is usually assumed that light verbs are semantically reduced and only contribute to the complex predicate's aktionsart (e.g., von Polenz 1987, Eisenberg 2013). German possesses different light verbs among which are the two dynamic predicates *kommen* 'come' and *geraten* 'come, get'. The two verbs are treated as inchoative light verbs expressing the inchoation of the eventuality denoted by the phrasal element (Fleischhauer & Hartmann, 2021). Thus, the two LVCs in (1) express the inchoation of a rolling event.

(1) a. *ins Rollen kommen*
in.the rolling come
'start rolling'
b. *ins Rollen geraten*
in.the rolling get
'start rolling'

Under the common view which assumes that light verbs only contribute to the aktionsart of the LVC, the two LVCs in (1) should be synonymous. However, there are examples in which only one of the light verbs can be used. In (2) only *geraten* but not *kommen* can be used.

(2) *Die Zuschauer sind aufgrund des unerwarteten Plot Twists in Verwirrung geraten/*
the viewers are because.of the unexpected plot twist in confusion get
#gekommen.
come
'The viewers are confused because of the unexpected plot twist.'

The asymmetry observed in (2) is not an isolated example as event denoting nouns seem generally less acceptable as the subject argument of *kommen* than of *geraten*. This suggests that LVCs differ with respect to selectional restrictions. Such differences are indicative of semantic differences between the two LVCs as they are applicable to different types of arguments. Since this is, so far, only based on intuition, we need a corpus study to validate (and probably refine) this observation. Therefore, we searched the German reference corpus DeReKo (Leibniz-Institut für Deutsche Sprache, 2021) by using the search engine COSMAS II (Leibniz-Institut für Deutsche Sprache, 2020) for all occurrence of inflected *kommen* and *geraten* in combination with the preposition *in* (the two light verbs always require a PP-complement). As the two components of an LVC are not necessarily realized adjacently, we searched for the occurrence of the two elements within the same sentence by using the search string '&geraten/kommen /s0 &in'. For both construction types, we took a randomly collected sample of 10000 sentences. Since LVCs cannot automatically be distinguished from regular predicate argument constructions because of their similar morphosyntactic structures, all hits were analyzed manually. In a first annotation step, we distinguished light from non-light uses of the verbs by e.g., substitution tests. As a second step we annotated the semantic type of the subject referent. Precisely, we differentiate between concrete (± animate), abstract and eventive nouns in the annotation.

Based on the analysis of some preliminary data, our initial observation seems to be confirmed: the two light verbs show a significant difference when it comes to the realization of eventive nouns in subject position. Besides presenting the results of the corpus study, we aim at accounting for the observed differences. A relevant factor for explaining the observed differences is 'control' (Kaufmann, 2004) since in its literal use *geraten* adds a sense of accidentally which is maintained in its light use (Winhart, 2002).

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How to get into Containers. Spatialization and the emergence of German 'Come to mind' and Light verb constructions

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Keywords: Conceptual metaphors, Constructionalization, Semantic space

This paper investigates multi-word expressions which are formed following the pattern *in* 'in' N *kommen* 'come'. This structure is encountered in German in at least three different ways with respect to its semantics and its degree of idiomaticity. The diachronically primary concrete reading (1) denotes a change of location. 'Come to mind' constructions as in (2) lack a concrete local reading and denote abstract entities like mental content. Light verb constructions as in (3) are also characterized by a certain abstraction. They consist of an asemantically light verb and an eventive noun and form lexical units (see e.g. Fillmore 1987; Fleischhauer & Hartmann 2021):

(1) *in das Hotel kommen* 'enter the hotel', lit. 'come into the hotel'
(2) *in den Sinn kommen* 'come to mind', lit. 'come into the mind'
(3) *in Bewegung kommen* 'come into motion'

Both 'Come to mind' constructions (2) and Light verb constructions (3) result from ontological metaphors in that they create spatialized target domain entities: STATES / MINDS ARE CONTAINERS (see Lakoff/Johnson 2003, Lakoff 2006). They differ with respect to the way that only in Light verb constructions an animated Experiencer can appear structure-internal as a subject argument, if it represents an intentionally movable entity. In 'Come to mind' constructions an animated Experiencer only appears structure-external. What is also noticeable are the differences between the two types in their diachronic development: Light verb constructions consisting of the light verb *kommen* and an eventive noun are not attested until Early New High German and still continue to find high productivity up to the present day (see Fleischhauer/Hartmann 2021). In contrast, 'Come to mind' constructions are already attested extensively in Old High German. Using data from six periods of German (Deutsch Diachron Digital: Referenzkorpus Altdeutsch, c. 750–1050; Referenzkorpus Mittelhochdeutsch, c. 1050–1350; Referenzkorpus Frühneuhochdeutsch, c. 1350–1650; and data from Deutsches Textarchiv, c. 1350–1700, 1700–1800, 1800–1900;), the study attempts to answer what semantic, formal, and structural reasons can be found for the different behavior of the two constructions in their emergence and persistence. It will be argued that the lack of agency as well as the corresponding absence of an Experiencer's ability to control the situation allows 'Come to mind' constructions to skip desemanticization processes otherwise considered necessary as in Light verb constructions (see Fleischhauer/Hartmann 2021). Furthermore, it will be shown that the availability of possible elements within newly coined structures is always exploited to the maximum unless there are impediments to the process. While the pool of new mental content nouns is already exhausted early, German Light verb constructions feed on an almost unlimited supply of new material: The establishment of different kinds of deverbal word formation opens up immense potential for the coining of appropriate nouns from Middle High German onwards. This saves Light verb constructions from an 'evaporation effect' to which constructions with lower lexical potential fall victim. The results of the study will open a 'materialistic' view on linguistic metaphorization, as it only comes to unfoldment through morpho-syntactic and lexical preconditions.

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A new approach to measuring lexical diversity in historical corpora.

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Keywords: Lexical Diversity, Productivity, Word Embeddings, Corpus Linguistics, Computational Linguistics

The question whether and how we can measure lexical diversity has long been a pertinent one in Linguistics and related disciplines. Attempts have been made to estimate the vocabulary size of (average speakers of) a particular language (at different ages) (e.g. Ellegård 1960, Brysbaert et al. 2016, Segbers & Schroeder 2017), and many studies in (Diachronic) Construction Grammar are concerned with estimating the number of unique lexical items that may occur in particular morphosyntactic structures for different individuals or across time (e.g. Schmid & Mantlik 2015; Perek 2018). To address these questions, researchers often resort to corpus research, using quantitative measures that rely on type and token frequency and/or hapax legomena, such as (variations on) Mean Word Frequency (MWF) and Type-Token Ratio (TTR) (see Tweedie & Baayen 1998), and realized/potential/expanding productivity (Baayen 2009).

However, in many corpora, unique character strings cannot be equated to unique words. This may be due to spelling variation or OCR errors, which are very common in historical corpora (e.g. the Modern English character <ſ> is often mistaken for <f> or <l>, which means *strength* <ſtrength> can also be represented by <frength> and <lrength>). Because neither OCR errors nor non-standard spelling variation are entirely systematic, reducing such variation through corpus pre-processing can be challenging. As a solution, we propose an approach originally developed to estimate ecological diversity (Chao et al. 2019) called the attribute diversity framework, which distinguishes categorical diversity from functional diversity. We define 'categorical diversity' as the number of unique words in a text, and 'functional diversity' as a measure that also takes into account their distributional similarity. Operationalizing this similarity by means of word embeddings generated with the historically pre-trained language model MacBERTh (Manjavacas & Fonteyn 2022), we demonstrate that:

(i) Functional diversity estimates are affected to a much lesser extent by spelling inconsistencies and OCR errors than categorical diversity.

(ii) Given two sets of unique word types, set A{*dog, bird, rabbit*} and set B{*progesterone, remember, blue*}, the approach also captures the higher functional-semantic diversity of set B.

As a concrete case study to demonstrate the theoretical and practical advantages of discussing 'vocabulary richness' in terms of attribute diversity, we use the diachronic ARCHER corpus (version 3.2) and discuss diachronic changes in and differences between texts from different genres and by different authors in terms of categorical as well as functional diversity.

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A language-internal, as opposed to ontological and cognitive, explanation of the formation of utterances

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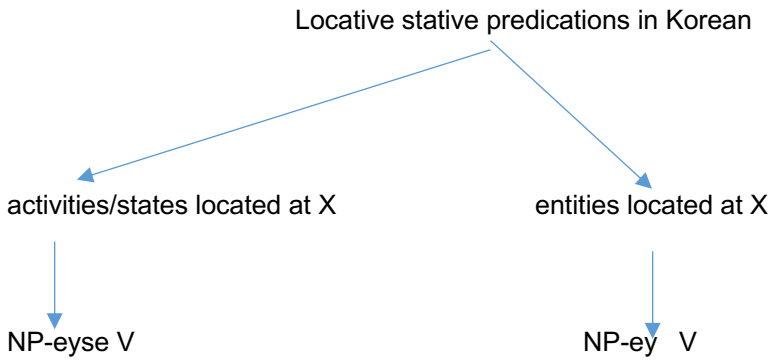
Keywords: common cognitive system, ontological categories, Korean stative locatives

The study complements the growing literature on the role of ontology in linguistics (Schalley (2019, and other references) by explaining how concepts, i.e. ontological categories, emerge as part of the cognitive system. The study demonstrates that within a language there are at least two levels at which semantic concepts are generated: the level of the lexicon and the level of grammatical structure. Even if the same ontological categories exist at the levels of lexicons, the semantic concepts encoded at the grammatical level may be quite distinct across languages. The case in point is the ontological distinction between events, states, and entities. In many languages the distinction between the three categories is encoded at the lexical level but is not encoded at the grammatical level. In a language in which this distinction is encoded in the grammatical system, speakers must scrutinize the planned utterances for these concepts. In a language in which this distinction is not encoded in the grammatical system, speakers do not have to scrutinize the utterance for such concepts. The evidence for the proposed hypothesis is provided by contrasts between Korean and Western Indo-European languages.

Korean is typologically rare in that it has two stative locative predications whose form depends on the ontological class of the category whose location is predicated. One class combines activities and states and the other consists of entities. The NP below is the head of the locative complement:



If the ontological category whose location is predicated is an ENTITY, the locative complement is marked by the postposition *-ey* (example 1). If the ontological category whose location is predicated consists of STATES or ACTIVITIES, the locative complement is marked by the postposition *-eyse* (example 2), as already noted in Song 2005:114 (see below). The ontological category ACTIVITY or STATE may be represented by a clause (ex. 3), by a verb (ex. 4), or by the mere use of the postposition *-eyse* (ex. 5). The feature that unites states and events in Korean is that both carry some modal values, as opposed to entities that do not carry modal values. In Western Indo-European languages, including English, there exists ontological distinction at the lexical level between activities, states, and entities. There is, however, no formal distinction between clauses predicating the presence of an entity in place X and clauses predicating the presence of an activity or state in place X. Hence, in languages in which the distinction between the two ontological categories is not encoded in the grammatical structure, the speaker's cognitive state ignores this distinction. We can postulate that, in language production, speakers **must** express any concepts that are part of the semantic structure encoded in the grammatical system if these concepts are involved in the situation the speaker conveys. This provides substance to and confirms Jakobson's saying that languages differ not in what they may express but in what they must express.

Examples and references

(1) *hakkyo-ey* *iss-ta.*
school-LOC.EN exist-DECL
'[He] is at school.' (loc.en: location of an entity)

(2) *hakkyo-eyse* *no-n-ta.*
school-LOC.ACT play-PRS-DECL
'[He] is playing at school.' (LOC.ACT: location of an activity/state)

(3) *insangkiph-ess-ten* *umsik-un* *phulangsu-eyse* *mek-ess-ten*
impressive- PST-REL food-NOM France- LOC.ACT eat-PST-REL
talphayngi *yoli-ka* *iss-upni-ta*
snail dish-nom be-HON-DECL
'The most memorable food is the snail dish that [I] ate in France.'

(4) *ice* *yeohaeng-ul* *kkutnay-ko* *sukso-eyse* *shil* *ttae* . . .
now journey-ACC complete-and accommodation-LOC.ACT rest when
'When [I] complete a journey and have a rest at the accommodation now, …'

(5) *hakkyo-eyse* *iss-ta.*
school-LOC.ACT exist-DECL
'[It] takes place at school.'

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See- I saw: Epistemic justification as justification of the witness

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Keywords: Seeing is knowing, Epistemic justification, Identity Construction, Courtroom Discourse, Intersubjectivity

This paper makes a small but significant contribution to a more extensive research on identity construction of Jamaican Creole-speaking resident witnesses in a predominantly English-speaking truth commission that follows a deadly joint military operation in the witnesses' community. The research uses ethnographic tools to unearth key components of the complex communicative context to guide the analysis and situate it in the conceptual framework of intersubjectivity.

Within courtroom discourse, witnesses' institutional role is solely to relate their story as valid (Coulthard & Johnson, 2007); otherwise their institutional identity loses credibility. Therefore, as witnesses transmit the external reality of the experiential space unto the articulatory space of the courtroom reality, any evaluation of information source and indication of commitment are doing identity work. This raises the question explored in this paper: how do evidential and epistemic strategies negotiate resident witnesses' identity in the discourse space?

The data comprise approximately 12 hours of video-recorded interviews of only the first six resident witnesses. The analysis reveals a co-constructed conceptual hierarchy of evidential values in which visibility is given primacy, and witnesses' institutional and other levels of identity are negotiated. For instance, when it was put to resident witness, Palmer, that there were men in the community firing guns, his response was that he cannot agree because he never *saw*. Though challenged by counsel, this stance was substantiated when Palmer reassigns the proposed evidential value, by introducing his physical and perceptual distance from the external reality in the experiential space, to preserve both his social and institutional identities.

Later, when challenging Kishonna's assertion that soldiers shot and killed her stepfather, cross-examining counsel challenged her visual access, thus reducing her evidence to an inferential value. According to Nuyts (2017), experienced markers, such as *seeing*, connotes high reliability. However, inferences are not automatically evaluated as highly reliable. As such, some inferential forms are strong, like English 'clearly', denoting an inherent high reliability. A multimodal analysis reveals how Kishonna uses gestures similarly. In response to counsel's proposition, Kishonna positions herself within the experiential space, removing any proposed physical and temporal distance from the external reality. Consequentially, in the intersubjective space of the courtroom reality, this would shift her evidence from counsel's proposed indirect evidential categorization (Plungian, 2001). Kishonna then affirms what she saw, using a referential gesture as epistemic justification to reassign the evidential value as higher-order, experiential.

Kishonna repeatedly transmits this external reality using the same bimodal channel, as an identity presentation mechanism. According to Bucholtz and Hall (2005), one of the ways in which identity is intersubjectively constructed is through the relationality principle of authentication. Kishonna authenticates her narrative, shifting its value to experiential, by gesturally providing visibility as evidence. The paper reiterates the primacy of sight in validating witnesses' institutional identity and shows how gesture's immediacy characteristic and repetition invoke cognitive processing in the intersubjective space to shift evidential values. This in turn can frame witnesses' interactional identity as credible and their narrative as valid.

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Explaining the speed of lexical change in historical Dutch

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Keywords: Dutch, diachronic change, lexical semantics, quantitative analysis, lexical replacement

Why are different words replaced by new synonyms at different rates? In some domains, new variants replace each other rapidly (e.g. *awesome* or *lit* to refer to something COOL), while other domains display more stability (e.g. EAR). Recent research has shown that the speed of lexical change is influenced by word-related features, like frequency, word class, length or age of acquisition (Bochkarev, Solovyev & Wichmann 2014; Monaghan 2014; Pagel, Atkinson & Meade 2007; Wichmann & Holman 2013). In this paper, we analyze whether characteristics of concepts play a role as well. Taking our lead from Franco et al. (2019) who showed that concept characteristics such as familiarity, vagueness and affect-sensitivity influence the amount of synchronic lexical variation in the base dialects of Dutch, we test whether these characteristics affect the speed of diachronic change in Dutch as well.

The data we use come from the *Middelnederlands Woordenboek* (Middle Dutch Dictionary: 1250-1550) and the *Woordenboek der Nederlandsche Taal* (Dictionary of the Dutch Language: 1500-1976), two large dictionaries of historical Dutch. We extract data from the digitized versions of these dictionaries with the DiaMaNT tool (Depuydt & de Does 2018), a semantic historical computational lexicon for Dutch, zooming in on 252 concepts from two semantic fields: body parts and clothing terms. In particular, for each body part or clothing concept we record all the variants that are available as (historical) synonyms to express the concept, as well as the times at which they were used (by relying on the citations available in the dictionary). For example, for the body part JAW, we record that it occurs with 5 variants between 1500 and 1550, including *kaak* (the current Standard Dutch lexeme), *kinnebak*, *pellorijn* and *kieuw*.

Next, we divide the dataset into 50-year periods. For each period, we calculate two types of information: (1) the number of variants in use at each time point, and (2) the proportion of variants in use at a given period that were also used during the previous period. Using this information, we can answer two research questions: (1) is the number of synonyms for the concept diachronically stable, or are there fluctuations (diachronic stability)?; (2) how quickly do variants disappear from the data, how quickly are they replaced with new synonyms (the rate of lexical replacement)?

Our hypotheses are that the factors that play a role in synchronic data, affect diachronic change as well, viz. familiarity, vagueness and affect-sensitivity. Moreover, we may find differences between the body part concepts and the clothing concepts as the former concepts have a higher degree of universality and may therefore only rarely be referred to with novel lexical items.

Preliminary results on the body part concepts indicate that there are some trends in the data that confirm the correlation between familiarity and diachronic stability on the one hand, and affect-sensitivity and diachronic stability on the other. For vagueness, the picture is less clear. Further data collection and analyses will take place in the coming months.

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From theory to empiry and back again: A cognitively inspired model for complex verbal constructions in Romance.

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Keywords: complex verbal constructions, Romance languages, constructivism, cognitive modelling, experimental approach

Verbal periphrases are a common type of complex verbal constructions, especially in Romance languages (as compared to e.g. Germanic languages). Broadly defined as a combination of two (or more) verbs – sometimes joined by a preposition or conjunction – forming a single predicative unit, they are considered a central characteristic of all Romance languages, expressing temporal, aspectual, modal and diathetic values (e.g. Pusch & Wesch 2003, Gómez Torrego 1999). Due to their high (formal and functional) variability as well as their reduced compositionality, different approaches have already been proposed to tackle this phenomenon (e.g. Laca 2004, Bertinetto 2001, Olbertz 1998; recently also from a constructivist perspective, e.g. Garachana 2020, Füreder 2021, Füreder in press). A cognitive account, however, is still missing. The present paper thus sets out to fill this gap by suggesting a model based on experimental psycholinguistic data.

Various studies show that experimental methods can prove very valuable in theory building and shaping (e.g. Boye & Harder 2012, Boye & Bastiaanse 2018, Hennecke & Wolf 2021, Van Lancker Sidtis 2004). Methods such as self-paced reading, eye-tracking or ERPs have been found highly insightful in psycholinguistics, particularly with respect to multi-word units (e.g. Siyanova-Chanturia 2013, Schmitt & Underwood 2004, Siyanova-Chanturia & Van Lancker Sidtis 2019), of which verbal periphrases are also a part. In order to investigate how periphrastic verbal constructions in Romance are processed by native and non-native speakers, a self-paced reading study is being administered to a L1 German experimental group and a L1 Romance control group. To this end, a selection of verbal periphrases in Spanish, French and Italian is presented in a non-cumulative reading paradigm on a computer screen, followed by an acceptability rating and a comprehension question.

First results from Spanish (12 participants, 80 experimental items) suggest a divide into three broad groups of periphrastic verbal constructions: (i) highly grammaticalised units with rather low compositionality (such as compound tenses; e.g. fr. *venir de* + inf. 'have just done', sp. *ir a* + inf. 'be going to'); (ii) fairly free combinations with high compositionality (such as modal verb constructions; e.g. it. *dovere* + inf. 'must'); (iii) constructions between the extreme 'poles' (i) and (ii) with position or motion verbs (e.g. it. *stare* + ger. 'be doing', sp. *ir*/*andar*/*venir* + ger. 'do gradually') and with semi-auxiliaries (e.g. fr. *se mettre à* + inf. 'begin', sp. *dejar de* + inf. 'stop'). Highest acceptability ratings and lowest reaction times were found for constructions of type (i) and (ii), lower acceptability ratings and higher reaction times for constructions in between. Hence, these groupings appear in favour of a 'continuum model' spread between the 'poles' morphosyntax (i) and lexicon (ii). Despite the preliminary character of these results, they might serve as an indicator for the constructional status of the individual periphrastic constructions and allow (at least cautious) predictions about a possible cognitive representation. Taking into account the psycholinguistic and cognitive reality of language as well, the model aims to add to a fuller understanding of periphrastic verbal constructions in Romance.

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Analyzing the sublexical structure of LSQ neologisms

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Keywords: Lexical creation, Corpus linguistics, Sign language, Neologisms

As languages evolve, linguistic changes such as lexicalization and grammaticalization can occur to build their lexicon and grammar (Janzen 2012). To be lexicalized, a new lexical item – or construction – goes through the process of entrenchment and conventionalization. The construction can thus acquire the role of a unit, a regular form strongly associated with meaning, by the automation of cognitive routines and then be disseminated and used in a linguistic community (e.g. Langacker 2005; Schmid 2015). Some linguistic contexts enable us to study the life of new lexical items and their survival chance. This is the case, for instance, for the lexicon of emerging languages (Coppola 2020; Horton 2020) and for neologisms where the form of signs can be considered still unfixed or evolving, in the process of entrenchment, conventionalization, and acceptance (e.g. Langacker 2005; Schmid 2015).

Our study focusses on a corpus of neologisms in an established sign language, LSQ (Quebec Sign Language), and more specifically on the link between phonology and semantics in their sublexical structure. As the visuospatial modality offers a stronger iconic potential than audiovocal modality (e.g. Taub 2012), we posit that the semantic domain for which they were created, in this case astronomy, influenced the formation of the three major structural components of signs (place of articulation (POA), movement and handshape). For 49 astronomical concepts from the International Astronomical Union list, 99 neologisms were created by a team of LSQ signers.

The shape features of the neologisms' components were described and, like Pietrandrea (2002), we indicated whether each feature is non-meaningful (phonological) or semantically motivated. Within a corpus driven approach, we used an exploratory statistical method of factor analysis, the multiple correspondence analysis (MCA) (Sourial et al. 2010), and a chi-square analysis in order to verify if the difference between the counts of different variables is significant or not.

Results show that although all signs are semantically motivated, iconicity is not evenly distributed across phonological components and features. In this corpus, the semantic domain influenced the shape features of handshapes, this component thus acts as an iconic structural component, mainly by the [curved] feature of the selected fingers position. As for movement and place of articulation, their use in the creation of these neologisms is less prominent. The movement allows, in half of the cases, to iconically represent the shape of the referent or its spatial motion, whereas POA is mainly realized in the neutral space and does not participate in the representation of the referent. This suggests that sublexical components cannot per se be interpreted as bearing (or as being exempt of) iconicity. Findings from our analysis echo what has been proposed by van der Hulst & van der Kooij (2021), namely that a feature can be semantically motivated and that "semantic/iconic factors play an overriding role in the emergence of the phonological form of signs" (p. 22). To have a full picture of the potential entrenchment and conventionalization of these neologisms, future work will be conduct to survey LSQ signers about the neologisms' acceptability.

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The relationship between morphosyntactic productivity and print exposure in native Spanish speakers

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Keywords: literacy, morphosyntax, print exposure

A series of studies have been challenging the concept of universal grammar by demonstrating the presence of individual differences in first language (L1) ultimate attainment. Evidence points out that individual differences are partly related to variability in terms of educational level(Dąbrowska, Pascual & Gómez-Estern, 2022). As formal education requires constant exposure to print texts containing great lexical and syntactic variability (Biber, 1986), higher education levels often result in close-to-ceiling performances in native language tasks. By contrast, much more variation is observed for L1 speakers with lower educational levels. An extreme example of how education modulates individual differences in L1 acquisition is the comparison between literate and illiterate populations. In that regard, recent studies have shown that native illiterate and semi-illiterate speakers of Spanish have more difficulties comprehending complex syntactic structures and formulating verbal morphology than a literate control group (Dąbrowska, Pascual & Gómez-Estern, 2022; Authors, 2023). Possible explanations for these differences are that exposure to written text is beneficial due to the variety of structures presented on it and/or that creating written representations helps bootstrap the acquisition of morphosyntactic patterns (Dąbrowska, 2020). Building on this, in the present study we asked whether the morphosyntactic productivity of literate native speakers of Spanish is related to their exposure to print.

A total of 100 native Spanish speakers of ages between 20 and 65 completed three tasks: i) a vocabulary size test, the Lextale-Esp (Izura, Cuetos & Brysbaert, 2014), ii) a Spanish Author Recognition Test (SART) to measure participants' print exposure and iii) a nonce verb inflection task as a measure of morphological productivity. In this last task, participants were given a nonce verb (e.g., sofar) followed by a definition and an example of its use and conjugation, and they were asked to provide a verbal form that would match the specific subject that was provided after the example.

The results of preliminary analyses showed that our adult participants outperformed the older control group in the previous study and that they were slightly less accurate with the paradigm's less frequent forms. Furthermore, a significant correlation between the vocabulary and print exposure measures was found, as well as a small yet significant correlation between print exposure and morphosyntactic productivity in the nonce verb inflection task. We take this to indicate that print exposure may indeed modulate L1 morphosyntactic proficiency but in a limited manner, suggesting that there may be some sort of threshold after which variations in print exposure have a much-reduced impact on L1 grammatical attainment.

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[INTENSIFYING] as a ground culture-bound category in weather sayings: a cultural linguistic analysis along the West Germanic dialect continuum

[Context] This proposal lies at the interface between work in the emerging field of weather linguistics (Koptjevskaja-Tamm 2015) and work on phraseologisms (proverbs, sayings, etc.) used to denote weather situations (Dundes 1989, Mieder 1996, Burger 2006 among many others) articulated with construction grammar (Ziem 2018). It focuses particularly on units such as those illustrated below in languages and dialects along the West Germanic dialect continuum (Keel 2020), with particular attention to High German, Low German, Flemish and Dutch.

(1a) Es regnet Bindfäden. (High German)
(1b) Dat guet wie ut ammeln. (Low German)
(1c) ’t regent mollejoengen. (Flemisch, West Flanders)
(1d) De regen komt met bakken uit de hemel vallen. (Dutch)

[Research questions] These utterances used not only to name the weather phenomenon in question but also to evaluate it, contain in addition to the classical meteorological verbs (Eriksen *et al.* 2010) NPs, PPs or VPs most often used figuratively and linked to concepts with a strong cultural anchorage. In this context, this paper will aim at addressing the following two research questions. (i) To what extent can we postulate the existence of an abstract construction - in the technical meaning of construction grammar - marking intensity in the weather domain and based on a set of more or less fixed lower-level constructions (Dobrovol’skij 2011, 2016)? (ii) How can we model the modes of cross-conceptualization of the phenomenon and its intensity along the considered dialectal continuum?

[Data] The study is based on a corpus of some 200 expressions extracted from the many collections of meteorological expressions produced most often by specialists in folklore or ethnology for documentation purposes, but which have very rarely been the subject of linguistic approaches (or else mainly in a paremiological perspective). All expressions have then been annotated at three levels: denomination of the weather phenomenon, qualification of the intensity, source domain of the figuration.

[Methodology] From a methodological point of view, the analysis starts from the weather frame, as described in FrameNet. It questions the fact that all the phraseologisms of the corpus, without exception, instantiate the so called non-core FE "specification" while the time and place slots (core FEs) are deictically marked. We then suggest a constructional analysis by articulating the constructions of the corpus with the family of intensification constructions. The figurative part of the latter is then approached in cultural terms within the paradigm of Sharifian's cognitive cultural linguistics (2017).

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Multimodality in Stand-up Comedy: A Case of Gestural Triggers and Intonational Cues

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Keywords: Cognitive Linguistics, Humor, Stand-up Comedy, Facial expressions, Prosody.

Humor, as a field of research, is a complex and intricate phenomenon that undertakes a cognitive process. This premise can be investigated through two cognitive theories: Clark's (1996) Layering Model and Fauconnier's (1997) Mental Spaces. Clark (1996) explains that the speaker exploits two layers for the "nonserious" discourse to occur, where layer 1 is "the base or foundation" and layer 2 is "like a theatrical stage created on top of it". In other words, humor is conveyed when two (or more) mental spaces clash, which creates incongruity that generates amusement and laughter (See also Giora 1991; Brône 2008; Brône et al. 2015; Tabacaru & Lemmens 2014; Tabacaru 2019). However, this "nonserious" discourse can be conveyed in a more complex way, exploiting both the linguistic and the non-linguistic properties of the language.

Furthermore, research has shown that language as we know it is only a tip of the iceberg. Other invisible or subtle areas include different domains that construct meaning either via linguistic manifestations (discourse, prosody) or via non-linguistic manifestations (facial expressions, gestures). Drawing from previous findings, Tabacaru (2019) and Tabacaru & Lemmens (2014) have looked at multimodality in humor, exploring the linguistic and non-linguistic elements that create humor. Their findings show that certain facial expressions (e.g., raised eyebrows) help the listener understand the humorous message and guide them to shift from a serious layer to a non-serious one. Many others have investigated prosody and have chosen sarcasm as a research subject in humorous discourse. For instance, Bryant and Gibbs (2015) found that, in sarcastic instances, the speaker either lowers or raises their pitch, or slows down when uttering their punchline. This suggests that multimodality as a non-linguistic element of conversation is exploited in humorous interactions.

In order to investigate the multimodal aspect of humor, the present study combines the verbal and the non-verbal elements of language. For such an analysis, the corpus chosen is Trevor Noah's Netflix Special "Son of Patricia." This study tries to unravel the subtle properties of how humor is conveyed, therefore, the central question is: How do multimodal cues work in favor to convey humor in the context of stand-up comedy? Since multimodality is a means to show the intention of the speaker, this study tries to investigate whether facial expressions and prosody co-occur in discourse, or if the presence of either facial expressions or prosody is sufficient for conveying humor. Therefore, we try to connect these non-verbal triggers to humor so as to examine the subtle aspects of humor.

The hour long special was analyzed by using ELAN in order to have a closer look at both facial expressions and gestures. These annotations were then analyzed on PRAAT in order to examine the prosodic markers of humor. Results show that there were no signs of prosody alone, i.e., without either facial expressions or gestures. However, there were instances where either facial expressions or gestures alone generated humor.

The aim for this research is to combine all these variables to investigate the cognitive aspects of humor.

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Networks all the way down

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Keywords: network structure, uniformity of representation, event structure, aktionsart

Among usage-based theories, there are different conceptions of the language network. Word Grammar (WG; Hudson 1984, 2010; Gisborne 2010, 2020) assumes that language is a network of atomic nodes, with signs an emergent property. In the radical network of WG, there are no complex nodes (contra Construction Grammar); all nodes are defined by the relations (associative and classificatory) that support them, and Word Grammar networks conform to a Uniformity of Representation hypothesis. However, like constructional theories, WG rejects the grammar/lexicon divide. In this paper we develop a WG analysis of Aktionsart data from English which supports its radical network approach.

Aktionsart presents a useful test-case. It is generally a lexical property, although the difference between *he drank beer* (atelic, a process) and *he drank a beer* (telic, an accomplishment) shows that it can be compositional. Like the ordering of elements in phonology, morphology and syntax, telic eventualities are directed. However, associative networks are inherently undirected. In addition, there is variation within telic eventualities as follows:

• In *he drank a beer*, the accomplishment is derived compositionally but in *she built a house*, it is lexical;
• each sub-event of *drinking a beer* is an event of beer-drinking, but *building a house* consists of a series of sub-events of different kinds which culminate in the existence of a house.

Furthermore, different aspectual patterns can be found with several verb complementation types, giving rise to complex interactions between event complexity and verb complementation. These facts taken together imply that the same network elements should feature in both compositional and lexical semantics. They also imply that representations should be non-discrete and not nested because the same semantic representations are found in different domains of structure, in line with the rejection of the grammar/lexicon divide.

We establish a framework for building directionality into the network as a derived property, to allow for the directed nature of both linguistic structure and event structure, drawing on the idea of a co-occurrence network and ideas in Hudson (2010). From this, we develop representations of the temporal contours of the different eventuality types, building on Holmes' (2005:170) analysis of 'galloping'. We establish network representations for *drinking beer*, *drinking a beer,* and *building a house*. We show that semantic relations, such as 'result', are found in clausal and lexical meaning and we show how a model of scalar meaning (*heat water*) can be derived from the analysis of telicity.

We demonstrate how WG captures a range of complex semantic phenomena, while keeping its ontologically assumptions minimal, and with the links in the network prioritised, because the WG network has no complex nodes. We provide semantic evidence for the cognitive-linguistic position that there is no lexicon/grammar divide as well as showing how a cognitive-linguistic network model can capture semantics at the same degree of granularity as a formal semantic analysis.

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Linguistic competence as an object of experimental research

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Keywords: Linguistic competence, Semantics, Assessment, Native speaker, Introspection

Linguistic competence and the related concepts of introspection and linguistic intuition are often regarded by linguists as the dominant criterion for the verification of their theoretical models (e.g., Chomsky 1965, 1975; Wierzbicka 1985: 19, 69–70, 212, 332–333; 1996: 347). At another level, arguing or illustrating theoretical ideas by referring to "wrong" (*X) or "doubtful" (?X, ??X) constructions has long been a common feature of linguistic research. Importantly, the "incorrectness" or "doubtfulness" of the constructions is usually not substantiated by anything, being considered obvious to any competent native speaker. This practice is based on the postulate of coincidence (or at least the absence of significant differences) of the linguistic intuitions inherent in competent speakers.

That said, strong concerns about this postulate have been raised over last decades (e.g., Schutze 1996: 1–5, 48–53; 2005; Hallan 2001: 91–92; Gibbs 2006; Talmy 2007: XII–XV; Dąbrowska 2010; Janda 2013; Häussler & Juzek 2020; Santana 2020).

The present study continues this criticism by addressing the semantic aspect of linguistic competence. The authors distinguish between semantic area A (correct sentences, e.g., *Masha otkryla dver' i voshla v komnatu* 'Masha opened the door and entered the room'), area B (incorrect sentences, e.g., *Molodjashhajasja teorema kusala prokazhennyj sinus treugol'nika* 'The juvenile theorem bit the leper sine of the triangle'), and area C ("doubtful" sentences, e.g., *Na uglu ulicy stojalo lenivoe zdanie* 'There was a lazy building on the corner of the street') in Russian and explore area C.

If the postulate of coincidence of linguistic intuitions of native speakers were true, then the most of the subjects would rate the sentences of area C as "doubtful" (?X). A series of nine experiments has been conducted to check this. In these experiments, subjects (a total of 1392 participants of different gender, age, education and occupation) were asked to rate various sentences subsumed into area C on the scale from 1 (incorrect sentence) to 5 (correct sentence). The first experiment (242 participants) was pilot and conducted online, while the remaining eight experiments were carried out in person. The experiments have provided clear evidence that linguistic intuitions of native speakers do not coincide: for almost all sentences used as a material for the experiments (more than 50 sentences), the assessments of the subjects differed markedly. This is true for both non-experts and experts (the discrepancies between experts were smaller than those between non-experts, but they were also significant). No general tendencies in the assessments have been found out, but for some sentences there was a significant difference between men and women, for others – between high school students and university students, for still others – between students of the department of philology and students of other departments (in this case, doubtful collocations were included in the short (e.g., *Ego vstretil gor'kij shum goroda* 'He was greeted by the bitter noise of the city') and "literary" (e.g., *On priletel vechernim rejsom, i ego vstretil gor'kij shum goroda* 'He arrived on an evening flight and was greeted by the bitter noise of the city') versions of a sentence). Ultimately, the assessment is likely to be a result of the interaction of linguistic and extralinguistic factors. In addition, for special types of sentences built around an interplay of different perceptual channels, there was a significant difference in the assessments when listening and reading them, as well as placing "doubtful" collocation at the beginning and at the end of the sentence (e.g., *Sladkij shelest dozhdja slyshalsja za oknom* и *Za oknom slyshalsja sladkij shelest dozhdja*).

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Sociocultural factors influencing an onomasiological competition: the case of constructions of *otkryvat' butylku* 'to open a bottle' and *otkuporivat' butylku* 'to uncork a bottle'.

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Keywords: Onomasiology, Lexical choice, Sociocultural factors, Diachrony

Although onomasiology is a well-developed area in lexical semantics (the list of works in onomasiology up to 2009 presented on the linguistic platform *Onomasiology Online* (https://www1.ku.de/SLF/EngluVglSW/OnOn.htm) includes more than 2500 entries), sociocultural factors influencing a lexical choice in a specific situation are explored in a quite limited number of studies (e.g., Geeraerts 2018: 161–194; Montes et al. 2021; Kostomarov 1999*:* 11–20; Pocock 1989: 3–41).

The present research examines an onomasiological competition between lexical units, focusing on sociocultural factors that have an impact on the lexical choice. The process of opening a bottle is under scrutiny, and the constructions of *otkryvat' butylku* 'to open a bottle' and *otkuporivat' butylku* 'to uncork a bottle' are an object of the diachronic analysis. It is shown that the construction of *otkryvat' butylku* 'to open a bottle' is extremely rare in written Russian until the Soviet era, but its frequency rises sharply in the Soviet time ant outstrips that of the construction of *otkuporivat' butylku* 'to uncork a bottle' by the end of the 1980s. The study provides clear evidence that both changing everyday practices (the variety of bottles and the diversity of ways to open them rose markedly) and ideological changes taking place in the wake of the October Revolution, which led to the lexical competition between certain sociocultural groups (roughly speaking, intellectuals and workers and peasants), were the main sociocultural factors influencing this process.

As a generalization of the case study, the concept of "ontological weight" of a lexical item, different for different sociocultural groups was introduced. Another generalization is the identification of two basic approaches to the presentation of any practice: direct, based on the author's contemporary day-to-day experience, and "literary", premised, mainly, on the formed tradition of its presentation in literature. The approach a speaker/writer takes in a particular context also influences lexical choice.

In addition to the corpus study, an experimental research of the lexical choice between the constructions of *otkryvat' butylku* and *otkuporivat' butylku* in contemporary Russian was carried out. A total of 121 native speakers of Russian of different gender, age, education and occupation were asked to fill in the gaps in several sentences taken from the Russian National Corpus. There were four control sentences separated by some fillers. In all control sentences the process of opening a bottle was described and the construction of *otkuporivat' butylku* was used. The procedure was carried out in person and took four to five minutes. After filling in the gaps, the subjects were asked to explain the difference between the constructions of *otkryvat' butylku* and *otkuporivat' butylku*.

Two results of this research should be emphasized. First, most of the subjects filled in the gap with the word *otkryvat'*, which provides supplementary evidence in favor of the corpus study. Second, in a significant number of cases, subjects' explanation of the difference between the constructions of *otkryvat' butylku* and *otkuporivat' butylku* did not coincide with their lexical choice. This means that their conscious interpretation of their choice and unconscious mechanisms behind it were different.

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ARE *TURN OFF THE MUSIC* AND *TURN THE MUSIC OFF* TWO DIFFERENT SIGNS?
A SEMIOTIC ANALYSIS OF THE 'PARTICLE SHIFT'

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Keywords: Verb-particle construction, non-random distribution, resultative, markedness

This paper is discussing the semantic distinction between the two configurations of verb-particle constructions applying the sign-oriented method of analysis. The traditional descriptive explanations of the difference between the continuous and discontinuous position of the particle draw on multiple factors, such as the length of the object, prosody, or even individual preference. The prescriptive approach dismisses the discontinuous word order as non-standard. This paper will show how the semiotic approach provides new insights for the study of variation and change in the English language. The data analysis provides evidence that the two positional variants reflect a semantic difference underlying their non-random distribution.

From the semiotic point of view, the two positional variants are regarded as two different signs, where the distinction in form necessarily brings about some difference in meaning (Bolinger). Iconically, the discontinuous word order shares the syntactic configuration with the resultative construction that includes an agent, a patient, and the result the agent's action on the patient engenders (Goldberg):

She turned the music off.
He watered the tulips flat.
Let's caffeine our problems away.

If we consider the discontinuous verb-particle construction to be a subtype of the resultative construction based on the iconicity of the signal, its semantic contribution should be different and marked for result, where result implies such aspectual meanings as completion, endpoint, telic goal, and others. The analysis of the data confirms this hypothesis. The continuous construction is chosen to reflect the process:

*How you **turn down** a job offer depends on your reasons for rejecting the offer.*
(Doyle, About.com)

The discontinuous construction makes a claim for the result:

*It is said he **turned** the offer **down** in a brief telegram, "Have already deserted sinking ship. Craig."*
(Shaw 1973:28)

My data culled from numerous literary texts and written and spoken corpora contrast the two types of the verb-particle construction and show how the semiotic principle of iconicity can be responsible for the semantic distinction between the two constructions. The non-random distribution of the forms is explained by the subtle difference in their meaning: the action is reported as marked for its outcome/endpoint/result when the discontinuous sign is used and as unmarked/neutral for this semantic feature when the continuous variant is preferred. This hypothesis is validated further by comparing the translation of the two variants into Russian, where the meaning of result has a mandatory morphological expression.

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All this metonymy stuff or conceptual indeterminacy as emotional response to crisis

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Keywords: metonymy, indeterminacy, emotion

The sense of uncertainty and the lack of control is a very powerful emotion overshadowing many rational judgments. In the past several years the world has experienced some very impactful events that reverberated quite emotionally in the population and the language used to describe them reflected this emotional import. Among many phenomena surrounding discourse on global crises we have noticed the case of indeterminacy or opacity of meaning found in the example of the construction "this X stuff/thing/mess/(bull)s**t", where X stands for the political or some other conflicting situation or event. Observed initially in the discourse on Brexit where it figured prominently as an emotional response to the prolonged period of negotiating the UK's exit from the EU, the construction was later used as a popular expression of concern over the COVID-19 pandemic, especially at its initial and more advanced stages, and could be observed more recently in the comments on the war in Ukraine.

The datasets consisting of British newspaper texts on Brexit with over 2 million words spanning the period from May 2019 to March 2020 (Gradečak and Tanasić, in press) and the data set of Croatian newspaper texts on COVID-19 pandemic spanning the period from March 2020 to March 2021 (Benčina and Kostanjevac, 2023) were analysed in the program Sketchengine following the Word sketch command 'Det+Brexit/COVID/corona+ Noun'. KWIC lines were analysed as well as the accompanying texts to detect the reference point (target domain) of the metonymically used lemmas.

We argue that the referential force of the nominal head 'stuff/thing/mess/(bull)s**t' is triggered by the lack of relevant information and consequentially emotions. It gets intentionally blurred by a metonymic expansion to several potential target domains creating a sense of insecurity and general emotional instability, ranging from fatalistic indifference to exasperation and raging anger, as observable in examples with profanities. As shown in Brdar and Brdar-Szábo (2021), an approach to metonymy is needed that is based not on the notion of mapping but on the activation of the source conceptual cluster that opens up a related mental space. This space is dynamically expanded or reduced so as to come as close as possible to fitting the conceptual frame provided by the co(n)text of use. In the case of Brexit examples, the mental space shifted from the actual deal to Johnson's exploitation of voter irritation to "get Brexit done" and win the PM seat, true to what Moss et al. (2020) describe as 'politics of emotion' in what seems to be the 'age of emotion'. In line with this label, the fear triggered by the corona pandemic provided further examples of metonymic indeterminacy, especially at its beginning when the lack of information surrounding its source and mechanisms of spreading was depicted by a vague referent such as 'thing', or almost equally opaque 'crisis', 'disaster' etc. The analysis follows the argument that the operative WHOLE FOR PART metonymy is typical for these emotional responses to crises in the sense that the linguistic vehicle for the source domain (following the tripartite division in Panther (2005: 358), and the modified model found in Brdar and Brdar-Szábo (2021)) refers to an amorphous, unspecified whole as a source concept, with more specific target concepts or the whole cluster activated by a shifting focus, sometimes simultaneously, and sometimes discretely, comparable to rather chaotic emotional responses as opposed to sharply delineated shapes of rational arguments.

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Collostructions revisited: making it simpler, making it better

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Keywords: collexeme analysis, distinctive collexeme analysis, confidence interval, bootstrapping

One of the most widespread corpus-linguistic methods to study constructions is collostructional analysis, a family of three methods applying an association measure-based approach towards the co-occurrence of different kinds of constructions. The three methods differ in what the units are that are involved in these co-occurrence data:

1. **collexeme analysis** (Stefanowitsch & Gries 2003): one looks at how much constructions (usually words/lemmas) (dis)like to occur in a slot of one usually more schematic constructions (as opposed to elsewhere);
2. **distinctive collexeme analysis** (Gries & Stefanowitsch 2004): one looks at how much constructions (usually words/lemmas) (dis)like to occur in a slot of a usually more schematic construction as opposed to alternative, functionally similar constructions;
3. **covarying collexeme analysis**: one looks at how much constructions (usually words/lemmas) in one slot of a more abstract construction (dis)like to co-occur with constructions (usually words) in another slot of the same more abstract construction.

In spite of the fairly widespread success of these methods, corpus linguistics in general has evolved to a degree that updating/revisiting aspects of this family of methods is overdue. In this paper, I make two sets of suggestions of how collostructional analysis can be updated.

The first set of suggestions involves simplifying the analysis for descriptive/exploratory purposes while at the same time enriching it with confidence intervals. More specifically, I propose to use a different kind of statistic as the main association measure, which has several advantages: (i) it speeds up the relevant computations by multiple orders of magnitude and avoids computationally expensive calculations to avoid the notorious problems of infinite results values, which then (ii) allows something that no collostructional studies have done so far, namely compute bootstrapped confidence intervals for collexeme strengths. I will exemplify this by revisiting Stefanowitsch & Gries's original case studies of ditransitives and particle verbs.

The second set of suggestions involves the idea that we should move away from a single kind of association measure for theoretical/exploratory purposes and instead quantify collostructional attraction as a tuple of, minimally, three ideally orthogonal dimensions: frequency, association, and dispersion, because only this kind of analysis can address all dimensions that are relevant to cognitive/usage-based approaches – entrenchment, contingency, and learning/exposure; this will be exemplified on the basis of the ditransitive and the *way*-construction.

Finally, I end with a (renewed) plea to take the notion of construction more seriously than most analyses have done. With some simplification, most existing work has actually not looked at the associations of (lexical) constructions to ('syntactic') constructions (i.e. true pairings of forms *and* meaning), but at associations of forms to syntactic constructions; using polysemous phrasal verbs, I exemplify the degree to which polysemous senses of lexical constructions exhibit wildly different constructional associations that most traditional analyses are likely to miss.

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On the argument fronting in Slavic languages - Constructional approach

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Keywords: embedded infinitive, Slavic, word order, raising, argument fronting

The present investigation focuses on the correlation between the position and the realisation of the arguments in the syntactically dependent clauses in some Slavic languages (Polish, Russian, Croatian and Bulgarian).

The fronting of the arguments of the embedded infinitives is an observed phenomenon, which has been traced back to the requirements of the information structure of the sentence. While the languages with the strict word order tend to develop the construction of the type (1-2) (known as tough-movement-construction) as a means of foregrounding an important topic (Givon 2001), the oblique form of the fronted argument in the Slavic languages (for ex. (3) and (4)) is due to their relative free word order (Comrie & Matthews 1990).

(1) Cette couleur est difficile à voir. [FR]
(2) This problem is tough to solve. [EN]

(3)	Ėtu knigu (*Ėta kniga)	legko (*legka)	čitat'. [RU]
	this bookACC (*NOM)	simpleNEUT (*FEM)	readINF
	'This book is simple to read.'		
(4)	Tu knjigu (*Ta knjiga)	je lako (*laka)	čitati. [CR]
	this bookACC (*NOM)	is simpleNEUT (*FEM)	readINF
	'This book is simple to read.'		

The fronting of the infinitival arguments out of the subordinate clause occurs prevalently in the constructions with a raising or an auxiliary matrix predicate, opening only one syntactical position for the infinitive and its arguments. It can also be commonly observed in the constructions with a control matrix predicate (as in (3-4) or in (5)) with an unexpressed first argument, probably because of the tendency to put the verb into the second position, since SVO (not being obligatory) is the statistical dominant transitive order in all Slavic languages (Siewierska & Uhlířová 2010).

(5)	Ego	xoteli	pobit'	raz.... [from ruscorpora.ru]
	himACC	want3P.PL.PAST	hitINF	once
	'Once they wanted to hit him...'			

The present study aims at surveying the distribution of the infinitival arguments in the complex predicate[1] constructions according to the construction type and the argument realisation (its morphological and syntactical category) in Polish, Russian and Croatian. With Construction Grammar we have a framework, where all construction types (and thus all word order types) have equal importance, since they reflect semantic, morphosyntactic (grammatical) or pragmatic information. In my contribution, I will discuss the motivations for the argument fronting within and across Slavic languages, as well as the factors blocking the fronting of arguments.

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www.ruscorpora.ru

[1] I use the term „complex predicate" in its very broad sense.

Climate change: a constructional approach

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Keywords: metaphor, construction grammar, climate change

Metaphorical framing can affect attitudes toward climate change and influence willingness to change behavior to mitigate ecological risk (Matlock et al 2017). A parallel but underdeveloped area of research concerns how an individual's attitudes on climate change can be evinced through metaphor. This research has the potential to show associative patterns between different frame mappings and frame profiling effects and specific beliefs concerning climate change. We argue that a construction grammar approach to metaphor (Sullivan 2013), combined with cognitive grammar (Langacker 1991) and viewpoint (Dancygier 2012) are useful in parsing through precisely how stance on climate change is represented in discourse. Just as viewpoint in language conveys experiential aspects of a scene, it can also represent more complex perspectives, including evaluative and epistemic attitudes (Dancygier & Vandelanotte 2017). Through the elaboration of an inheritance network undergirding metaphorical constructions (David, Lakoff & Stickles 2016), beginning with image schematic structure, specific aspects of frames can be highlighted or elided, and different viewpointed and/or deictic centers established.

Climate change is understood in terms of a pathway humanity traverses, i.e., "Climate science is clear: we're **heading in the wrong direction**" ("Climate change impacts" 2022). As such, of particular interest is how PATH and SOURCE-PATH-GOAL schemas are elaborated upon for rhetorical effect. Delineations, such as: what kind of path, mode of transportation, onlooker or internal perspective, speed, an impending threat moving closer, if one is moving towards said threat, and whether movements are aided or impeded, are factors that simultaneously serve scene encoding functions, while also expressing stance. When the PATH schema is invoked, elaborated upon and interpreted metaphorically, scope, established deictic centers, and relationships between trajectors and landmarks (Langacker 1991) can be freighted with epistemic and evaluative attitudes concerning climate change. Different viewpoints that pertain to the trajectory, as well as the perspectives provided by the metaphorical structuring of climate change can implicate different degrees of human agency and insinuate causal chains that pertain to political beliefs or purported governmental malfeasance. To that end, we analyze examples of metaphorical constructions from two American late night talk show hosts, Steven Colbert and Jimmy Kimmel.

Particular metaphorical frames of interest inheriting the PATH schema that Colbert and Kimmel use are Roadway and/or Highway, and evoke an overarching metaphor of CLIMATE CHANGE IS PROGRESSION ALONG A PATH TO DANGEROUS DESTINATION AND/OR DEATH. Examples include, "Climate change is here, it's now, and it's bad…We're on a **highway to the danger zone**." (Colbert 2021), and "Climate change is real. Our car is **speeding off a cliff**, and some of us are fiddling with the radio" (Kimmel 2021). We showcase how the metaphors that the talk show hosts use reflect beliefs pertaining to differing degrees of human agency. They do so via the experiential components of the image schemas and frames that are metaphorically evoked, which aspects of these frames are implicitly or explicitly profiled, and what viewpoint the trajectory of climate change is perceived from.

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Basic level categories in multilingual cognition

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Keywords: Basic level categorization, Mental lexicon, Multilingualism

In her work on the principles of human categorization Eleonor Rosch demonstrated that there is a basic level in categorization at which categories are defined as relying on perceptual characteristics, mainly attributes of shape (Rosch 1978). Since language plays a defining role in human categorization (Harnad 2005), Rosch also claimed that the words for basic level categories are the most fundamental in language, and thus it is an obvious assumption that the meanings of basic level terms are based on "gestalt perception" (Gallese & Lakoff 2005: 446). This would suggest that the meanings of basic level terms are mostly universal across languages. In spite of this, there are often considerable cross-linguistic differences in the range of referents designated by the respective terms naming these categories (Győri 2017). While one language may view a range of objects as belonging to one category, in another language the same range is divided up linguistically into two (or sometimes more) categories. This suggests that the meanings of basic level terms do not rely completely on perceptual attributes, which means that they are not directly names for perceptual basic level categories, but their meanings are influenced to a great degree by culturally conventionalized conceptualizations. Since human cognition relies mostly on language because of the relevance of cultural orientation (Lupyan 2016; Tomasello 1999), these cross-linguistic divergences provide an equally functional and adaptive view of the world for the speakers of a language.

However, beside the cross-linguistic explanation it is an equally relevant question from a cognitive perspective how the multilingual mind handles these divergences in linguistic categorization. The major questions we go after in this presentation is how the multilingual mental lexicon might be organized with respect to these divergences and what interlingual interactions – due to the dynamics of the mental lexicon – might take place among the languages stored in it. We also present an empirical pilot study on lexical transfer related to basic level terms with Hungarian-German-English trilinguals. The study examines "the influence of word knowledge in one language on a person's knowledge or use of words in another language" (Jarvis & Pavlenko 2008: 72) in the above respect.

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Sound correspondence patterns as cross-linguistic knowledge

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Keywords: phonology, receptive multilingualism, psycholinguistics, Diasystematic Construction Grammar

Being exposed to input from different languages or varieties is a common experience for most speakers across the globe. Linguistic approaches committing themselves to psychological realism and adopting a usage-based perspective thus need to make allowance for multilingual (and multilectal) input as forming part of speakers' experience with language.

A common type of multilingual experience involves that speakers are exposed to structures from a language or variety that is closely related to their L1 (or another language they already know). Input like this is special in that it often shows great formal similarities to the speaker's L1, especially lexical similarities in the form of cognates, which is why many closely related languages are said to be mutually intelligible. The Continental Scandinavian languages Danish, Norwegian and Swedish, e.g., are so similar that speakers are – to a certain extent – able to communicate across the language boundaries. At the same time, however, cognates often also show more or less extreme formal differences that can jeopardize their recognizability. This can also be observed in Interscandinavian communication, where spoken Danish in particular presents a challenge for untrained listeners due to special pronunciation features that can bring about a considerable linguistic distance to the cognate equivalents in Norwegian and Swedish (Gooskens & van Bezooijen 2013, Delsing & Lundin Åkesson 2005). While these differences do have the potential to lead to a communication breakdown, it is being reported that speakers in Interscandinavian communication rather quickly identify systematic differences as regular sound correspondence patterns and exploit this knowledge when decoding input from their neighbouring languages (Höder 2019, Braunmüller 1995, Bannert 1981). However, it has not yet been investigated how this acquisition actually takes place.

The PhD project presented in this paper explores in a series of psycholinguistic experiments how much and which kind of spoken Danish input speakers of Swedish need to process in order to identify a number of specific sound correspondences during a priming phase and successfully apply them when decoding new input in a subsequent translation task. Since there are several correspondences between Danish and Swedish that have certain features in common (e.g., a lenis-fortis difference in the pronunciation of all 'voiceless' plosives /p/, /k/, /t/), they offer some potential for abstraction. Therefore, the project does not just aim at finding out if certain sound correspondence patterns are acquired at all, it also explores how much speakers generalize in that case. The project explores this question from a usage-based constructionist perspective; more specifically, it adopts the approach of Diasystematic Construction Grammar (cf., e.g., Höder 2019), which postulates that speakers organize all of their linguistic knowledge in one integrated system. This entails the possibility of cross-linguistic links and abstractions and can help to explain the acquisition of sound correspondence patterns.

The paper explains the experimental design, the underlying constructionist and cognitivist assumptions, and discusses first results from online and on-site testing.

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Researching multimodal constructions. Theoretical & empirical foundations II

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Keywords: multimodal cx, NewsScape corpus, Little Red Hen Lab, *there*-construction

This talk aims at the extension of the theoretical and empirical foundations of research on multimodal syntactic constructions, asking in which way claims about 'multimodal constructions' may go beyond observations on the multimodal nature of constructional instantiations in face-to-face usage ('constructs'). We present a corpus study testing hypotheses created through a preceding pilot study on new data (Hampe et al., *in prep*.).

The pilot study had investigated 161 presentational uses of the *there*-construction in multimodal TV data from the Little Red Hen Lab (the 2015 recordings of *The View*) accessed through the NewsScape v4 corpus (Uhrig 2018). Of these, 136 tokens showed spontaneous co-speech gestures. The pilot was to develop a methodology for the quantitative analysis of multimodal data and to generate testable hypotheses, both theory- and data-driven, to be applied to a new and larger sample in a second/the main study. Data coding included vital dimensions of the verbal instantiations (presence of a LOCATIVE, POLARITY as well as ANIMACY and COMPLEXITY of the NP) as well as selected gestural features (PRESENCE, ONSET and degree of INDEXICALITY). The relatively high amount of divergence resulting from the independent coding done by all authors was resolved through extensive discussion intended to calibrate descriptive approaches as a preparation of the main study.

Due to the functionality of the *there*-cx, gestures of a high degree of indexicality were initially expected to dominate cx-related co-speech gesturing. Pilot results did not straightforwardly confirm this: At a mono-variate level of investigation of the gesture data, the frequencies of gestures of higher vs. lower degrees of indexicality did not significantly differ. In the absence of hypotheses about the relations between specific characteristics of the verbal plane of expression and those of co-speech gesturing, HCFAs (Gries 2018) of the entire dataset and of the gesture data only were employed to unearth any significant feature-level combinations. At a combinatorial level involving five of the six variables coded for the gesture data, the following feature-level combination occured significantly more frequent than expected (20 tokens, $p = 0.03$): Gestures of a high-mid level of INDEXICALITY and an early ONSET (during "there" or earlier) accompanying verbalisations of a positive POLARITY with an ANIMATE NP referent and CLAUSAL POSTMODIFICATION of N. Furthermore, the qualitative inspection of the examples with low degrees of indexicality revealed a recurrent, typically double-handed gesture visualizing a (referential?) area in central gesture space (hands vertical, palms facing center, fingers slightly bent and spread). Clearly, this schematic iconic gesture is also functionally related to the *there*-construction.

The hypotheses to be tested in the main study have emerged from these results. In particular, we expect the following gestural features to occur with a significantly higher frequency than others (including absence of gesture): (i) gestures with an early onset (during or before "there"), (ii) a set of gestures consisting of pointing gestures, presentational gestures and iconic gestures visualizing referential space (including combinations thereof), and (iii), within all gestures of low/no indexicality, gestures visualizing referential space.

To make sure that the set of usable tokens for the main study is both larger and more balanced, we not only retrieve a much larger random sample from a wider variety of TV formats, but also support the initial identification of usable data points by (i) an annotation tool developed for the rapid classification of multimodal data and (ii) the automatic detection of speakers and their hands with computer vision methods.

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A variational analysis of the concept of 'racism'.

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Keywords: social variation, contested concepts, politics and conceptualization, ideology

At least since Lakoff (2008), it has been widely recognized that cognitive linguistics can throw analytic light on issues that have been incompletely understood in prevailing patterns of political thought (not least in the progressive tradition). One of the ways in which this can be done is through a variational approach to key political concepts (cf. also Lakoff (2006) on the concept of freedom).

In this paper, I argue that the concept of racism should be subjected to a thoroughgoing variational analysis. Although there is a sense in which the struggle against racism has achieved near-universal support, there is also a sense in which certain manifestations of racism have become more salient and widely acceptable in recent years.

The proposed analysis begins with a 'classic' cognitive-linguistic analysis of conceptual variation with metonymic extension in a key role. The point of departure is 'full-blown' racism, understood as a comprising a social configuration in which an ideology involving the assumption of the superiority of 'the white race' goes with institutionalized practices that reflect this assumption. The argument then traces the (partly historical) extension towards the ethnic dimension, and towards discriminatory practices that do not rely on explicit ideological assumptions about racial superiority ('structural racism'). The ending point is the specifically anti-racist understanding of the concept whereby individuals can be classed as racists if they passively comply with a social pattern that involves discriminatory practices.

Reflecting the foundations laid out in Harder (2010) it is then argued that this analysis of conceptual variation needs to be supplemented with an analysis in terms of the social anchoring of this pattern, as well as the element of contested conceptualization that is manifested in political arguments over racism.

On the basis of this account, I am going to argue that more precise awareness of the contested and variational coverage of the concept of racism is necessary in order to pursue a successful struggle against the wide range of undesirable phenomena that the term is currently applied to. The issue has the following related, but different dimensions:

The conceptual-variational dimension: the metonymic extension from 'full-blown racism' to 'passive compliance with discriminatory practices' makes overall communication about the issue difficult.

The social-variational dimension: the differential social distribution of conceptual variants may reinforce already existing difficulties of understanding among social groups/subcommunities.

The referential dimension: the conceptual variants subsume areas of social reality with different causal structures. The concept of racism, used across these differences without awareness of the variation,is a blunt instrument for understanding what is going on out there.

The implementational dimension: successful action against racism requires knowledge about causal structures - otherwise the consequences of the measures taken will also be unknown. If such measures do not differentiate, efforts will be unsuccessful against phenomena whose causal structures are not taken into consideration.

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Intersemiotic Convergence in Multimodal Texts: A Cognitive Linguistic Approach

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Keywords: Construal, Multimodality, Intersemiotic Convergence

We offer a cognitive linguistic treatment of a particular intersemiotic relation – intersemiotic convergence – which we characterise as an echoic relation held between the mental imagery (in the form of conceptualisations) evoked by the verbal expressions in a text and their co-text images. Analogous with co-speech gestures, we use the term co-text images to refer to images that occur sufficiently proximal to a given language usage within a multimodal text that the two forms can be analysed together as comprising a single semiotic unit or syntagm. In news discourse, the prototypical example of this and where we concentrate our analyses is news photographs and their captions.

Much of the existing research modelling intersemiotic relations is based on extensions of systemic functional linguistics with a focus on how the transitivity structures expressed in language may be repeated in co-text images (e.g. Lui & O'Halloran 2009; Royce 1998). In cognitive linguistics, intersemiotic relations are addressed in Forceville's (2008) model of multimodal metaphor. However, the focus here has been on the collaboration between modes in the expression of a metaphor rather than on the co-expression of a metaphor across modes. We show that cognitive linguistics affords a multidimensional approach to modelling intersemiotic relations where language and image can be seen to coincide with respect to various dimensions of meaning. Crucially, from a cognitive linguistic perspective, such convergence does not occur between the surface verbal and visual structures of the text but between the conceptual structures a verbal expression conventionally evokes and co-text images.

A key claim of frameworks in cognitive linguistics (e.g. Langacker 2008; Talmy 2000) is that the meanings attached to linguistic expressions, in the form of conceptualisations, are modal in nature. As such, they share a number of semiotic properties with images. For example, according to Langacker (2008: 75), "many expressions undeniably invoke a vantage point as part of their meaning". In multimodal texts we may then expect the viewpoint specification included in the meaning of a linguistic expression to be similarly instantiated in co-text images. For example, where transitive (attack) versus reciprocal (clash with) verbs, which involve frontal vs oblique angle perspectives respectively (Hart 2019), occur in news reports of violent interactions between police and protesters, co-text images may depict the interaction from corresponding viewpoints. We show how such intersemiotic convergence occurs across multiple dimensions of meaning, including viewpoint, metaphor, image-schematic patterning, and distribution of attention.

We argue that when language and image regularly converge in this way, this may be taken as evidence (i) for the modal properties of language and (ii) of multimodal constructional status. In relation to (ii), our analysis therefore makes important theoretical contributions to the framework of multimodal construction grammar, which has hitherto been focussed on the position of gestures rather than images within multimodal symbolic units (Hinnell 2018; Kok & Cienki 2016; Zima 2017; Zima & Bergs 2017).

Illustrative data for our analysis is taken from a convenience sample of online news texts covering a range of topics including immigration, political protests and inter-state conflict.

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Redefining the Current Discourse Space Model as a Recursive Monadic architecture

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Keywords: current discourse space, monad, recursion, discourse, cognitive grammar, large language model, artificial intelligence, generative pre-trained transformer

This study aims to model the construction process of dialogic discourse. The goal is twofold. The first step is to redefine Langacker's (2001, 2012) notion of the current discourse space (CDS) as a recursive structure that incorporates the idea of "monads" from functional programming (FP). The second step is to simulate CDS as a monadic recursive structure in a computer program using a GPT-based text completion API.

Langacker (2001: 151) proposed considering linguistic structures as "instructions to modify the current discourse space in particular ways." In this view, every time a speech event occurs, CDS is updated in such a way that the entire discourse domain, which contains not only the concepts of the speaker, the hearer, and the subject matter but also the context and the shared knowledge, is passed on to subsequent speech events.

Following the argument of Hasebe (2021), this study maintains that CDS has a monadic structure and aims to redefine CDS as such. The concept of a monad is based on the category theory of mathematics and is widely used in the FP paradigm in computer science. A monad is often described as a "value wrapped in an environment" (e.g. Hutton 2016), and a structure that satisfies the conditions for being a monad is characterized by its ability to execute operations continuously and sequentially while maintaining and updating the structure given as the environment (Wadler 1995; Petricek 2018). The conditions are as follows: There is a procedure (*unit*, 1a) that wraps the target value *x* in the environment; there is a procedure (*map*, 1b) that "lifts" a function *f* to another function *f'* that deals with the value wrapped in an environment; and there is a procedure (*join*, 1c) that flattens a doubled layer of environments. It is shown that the process of updating CDS includes all these procedures and satisfies the requirements as a monad, and that CDS can be regarded as a type of "state monad" illustrated in Fig. 1.

(1) a. *unit* :: $a \rightarrow \boxed{a}$

b. *map* :: $(a \rightarrow b) \rightarrow (\boxed{a} \rightarrow \boxed{b})$

c. *join* :: $\boxed{\boxed{a}} \rightarrow \boxed{a}$

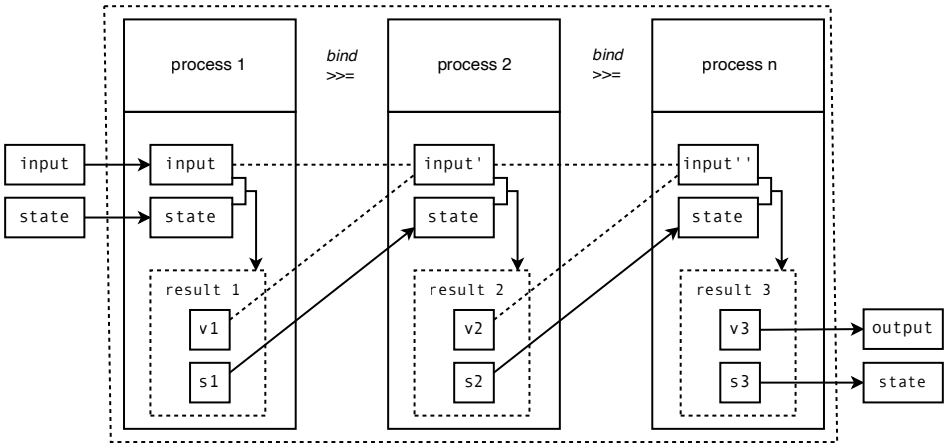

Fig. 1: State Monad

Redefining CDS as a monadic structure has practical advantages. For instance, the idea of CDS as a monadic structure can be used as a design pattern to implement a natural language computer interface like ChatGPT. Hasebe (2023) developed "Monadic Chat," a framework to provide an interactive interface to conduct a natural language conversation with large language models using the text completion API

of OpenAI. This framework enables developers to easily create a chat-style AI application program. In addition, by providing an extra implementation code for two component structures ("accumulator" and "reducer"), the composition and function of "context" and "shared knowledge" within CDS can be freely configured. The latter functionality allows for a computational simulation of processes such as incremental context building (Harder 1996; Langacker 2008), stack-based focus/memory management (Chafe 1994), and compression/abstraction of concepts (Fauconnier & Turner 2000; Barsalou 2005). The basic architecture of the software, which is essentially a state monad, is illustrated in Fig. 2.

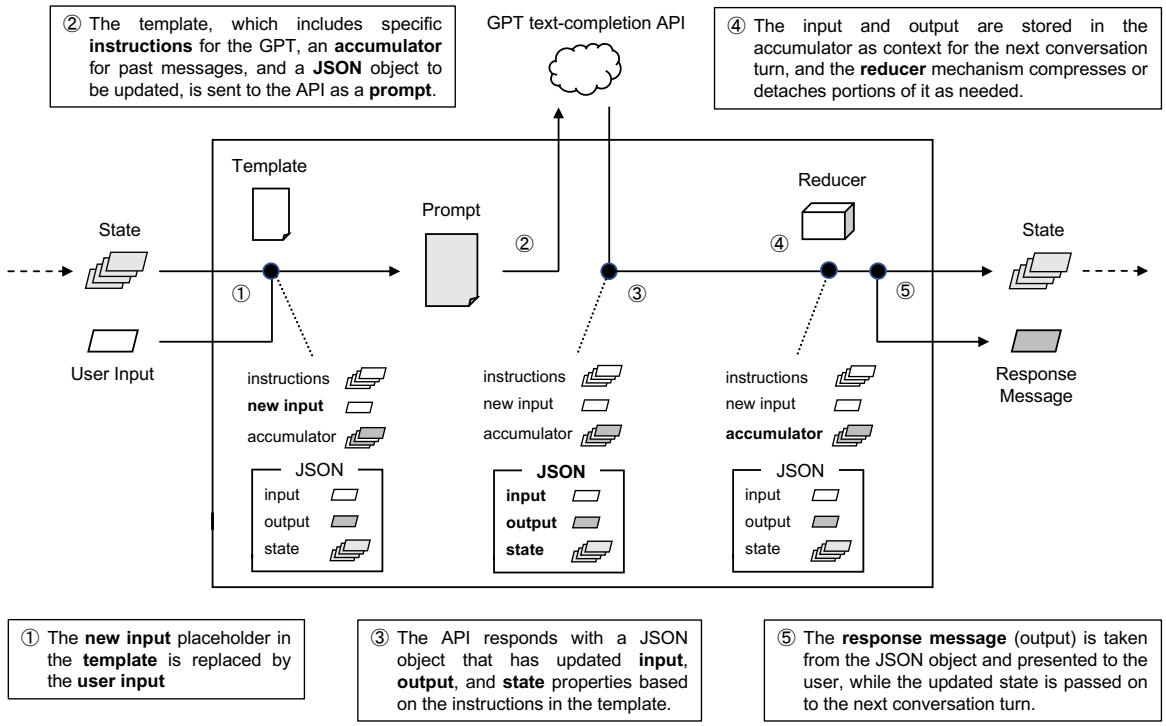

Fig. 2: Basic Architecture of Monadic Chat

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Applying the usage-based approach to language disorder: An examination of noun phrases in aphasia

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Keywords: aphasia, noun phrases, usage-based approach, constructions, language disorder

To fulfil their basic needs, humans need to communicate with others about objects, abstract concepts, people, places and situations. In typical language users, this fundamental act of reference is very commonly effected using noun phrases (NPs) (e.g. Serratrice & De Cat, 2020). But what happens to this key linguistic device when the language system is disrupted in some way, leaving the speaker less able to retrieve or assemble their utterances? This is the situation facing people with the most commonly acquired language disorder in adults: aphasia.

In line with the rule-based/componential view of language that remains dominant in aphasiology, research has studied individual elements of NPs in aphasia, particularly nouns (e.g. Alyahya et al., 2018), pronouns (e.g. Arslan et al., 2021) and determiners (e.g. Rosenbech Nielsen et al., 2019). Very little work investigates NPs as whole items, as would be of interest in a usage-based approach, a perspective which is only just beginning to gain traction in aphasiology (see, e.g., Boye et al., 2018; Hatchard, 2015; 2021; Hatchard & Lieven, 2019; Martínez-Ferreiro et al., 2020). No existing work applies this approach to whole NPs in spontaneous speech in aphasia, but doing so could provide new insight into this debilitating disorder - with potential implications for speech and language therapy -, and help to further test the usage-based approach, thereby also increasing understanding of typical language processes.

Regarding NP acquisition, usage-based analyses suggest that children develop their NPs gradually over time, beginning with the head nouns themselves, before building an understanding of determiners, adjectives and, later, postmodifiers over several years (e.g. Kemp et al., 2005; Eisenberg et al, 2008). Correspondingly, it would be unsurprising if NP elements were more preserved in this order in aphasia, as items that are acquired earlier may be more entrenched and potentially less prone to 'loss' (or loss of access) in this disorder.

This study provides a usage-based examination of NPs in spoken Cinderella narratives from 12 people with various aphasia 'types'/ severities. Comparisons are drawn to data from 12 neurotypical speakers narrating the same story.

Supporting usage-based predictions, findings suggest a continuum whereby NP length, complexity and variety increase with decreasing spoken language impairment severity: The NPs of the speaker with the greatest impairment consisted only of head nouns. Those with slightly greater capabilities still mainly produced only head nouns, but with occasional and uneven use of determiners (mainly numerals) and modifiers that were relatively basic (e.g. good, bad) or likely part of an entrenched expression (e.g. ugly in ugly sisters). Postmodifiers, in particular, were mainly only used from the middle of the speaker continuum upwards, as were multiple instances of a given component (determiners or modifiers) within a given phrase. Furthermore, overall, the percentage of NPs headed by nouns decreased, while those headed by pronouns increased, with less severe impairment.

Results are discussed in relation to both the development of linguistic theory and clinical practice (speech and language therapy).

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Modelling Syntactic Analysis in a Constructionist Framework: the CASA approach

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Keywords: Applied CxG, Blending, CxG, constructional description, constructicography, syntax

This paper sets out to describe CASA – a Constructionist Approach to Syntactic Anaylsis, which pursues two main aims:

(i) to develop a model of syntactic analysis that can be used in university teaching,

(ii) to develop an on-line constructicon containing the constructions that are most central to the analysis of English.

The first aim of CASA is based on the conviction that although Construction Grammar has proven itself to be a very fruitful model for the description of language and language learning, it has not yet managed to establish itself as the model of linguistic description on which foreign language teaching is based, although first steps in this direction have been taken (De Knop Gilquin 2016, Boas 2022). This may partly be due to the fact that, in some countries at least, in university teaching Construction Grammar is (at best) presented as a model of linguistics, but is not being used for actual language teaching or syntactic analysis.

It is absolutely essential that language students – and prospective foreign language teachers – should be introduced to the basic insights of cognitive linguistics and Construction Grammar and be shown in what ways this model is superior to previous approaches, especially traditional grammar. This talk intends to outline the basic principles of a model of syntactic analysis which aims to do precisely that.

The talk will outline

(i) the types of constructions we identify (declarative-'statement' cxn, past tense cxn, argument structure constructions, premodifier constructions, etc.),

(ii) the format of presentation, in particular the formal, functional and semantic categories as well as collo-profiles that we are using, and outline,

(iii) how the various constructions that can be identified in an expression (the construct) can be represented in the form of a construction grid that shows the points of overlap between the constructions and indicates which elements of a construct belong to which construction.

Particular emphasis will be put on the question of how constructions combine, where it will be argued that the concept of blending (Fauconnier & Turner 2006) can be applied to syntactic theory.

Furthermore, it will be shown how the format of constructions proposed for the syntactic analysis of sentences can be used (a) for an online CASA-ConstruCtiCon of English, and (b) in a pedagogical textbook for students of English linguistics.

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A Cognitive Grammar View on the Be+V-ing Construction

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Keywords: the Be+V-ing construction, *always*+Be+V-ing, stativity, progressivity, habituals

This study demonstrates how Langacker's (1991: 209-211) cognitive grammar view of the Be+V-ing construction can help us better understand the basic core meaning of the construction as well as the basic contrast between the construction with an *always*-type adverbial (the *always*+Be+V-ing hereafter) and its simple counterpart diachronically as well as synchronically.

Kranich (2010: 217) assumes that the *always*+Be+V-ing developed to express by default a negative speaker attitude in the 20th century, because temporariness signified by the Be+V-ing conflicts with and continuity implied by the adverb. However, why the conflict should arise and lead to a negative meaning is not entirely clear. Besides, nearly half of the *always*+Be+V-ing is used in a non-negative sense. Moreover, already in the 18th century, the periphrasis was used in a negative sense as often as it is now. Over 250 examples of the *always*+Be+V-ing in the 18th century texts that I have found evidence it. Most of them had been left unexplored, though the century is a critical period in investigating the construction.

Langacker (1991: 209) analyzes that the "internal perspective" on which the construction takes the participialized situation is a product of integrating **BE** functioning as the profile determinant and the head of the composite structure with the **V-ing.** It should effect the conceptualizer **being existent** in the midst of (i.e., experiencing the portion of) **the participialized situation**. As the construction profiles internality (inside-ness) rather than temporariness, the participialized situation can be of any span, as long as an internal phase of it is perceivable. As the inside portion, captured through the perspective, is shorter than the whole, it can most likely be connected to the clearer, more focalized and vivid imageries. What triggers emotional coloring would, then, not necessarily be the conflict, but rather the close link between the clearer picture and emotional involvement (c.f. Kensinger: 2007).

Langacker's cognitive grammar can powerfully account diverse phenomena of the construction most comprehensively with just one adjustment that is to accept aspect-neutrality of the periphrasis. As Killie's (2014) diachronic study shows, statives also have always been taking the construction. More than 250 examples of the Be+V-ing construction with a stative verb from the 18th century texts support this. The participialized situation, whether stative or not, has an internal phase. Langacker (1991: 262-266) notes that the simple present, including habituals, generally receives a stative construal. While *He walks home* is a habitual, *He's walking home* can denote an internal phase of either a dynamic situation or a habitual. If *Beavers always build dams* predicates a habitual, so does *Beavers are always building dams*. It designates a metaphysical situation inductively derived from the conceptualizer's actual individual perception of the situation ongoing whenever an occasion of assessment occurs to the speaker, whether the speaker may or may not find the animals' behavior annoying. The difference between *I love it*, *I'm loving it* and *I'm always loving it* can also be described in a parallel manner.

Furthermore, Langacker's (1991: 26) insightful idea of profile shifting can relate the V-ing in the construction not only to the gerundive V-ing but also to a diachronic fact that the form largely functioned as an abstract noun in OE (Irwin: 1967). An early variant of the construction comprising BE and {at/ in/ on}+V-ing also suggests its adequacy. Thanks to his conceptual tool devised in his theoretical framework, we can see that the periphrases with or without *always* have had consistent properties throughout history.

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Modeling the meaning of emotion words using multimodal features of real-world contexts

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Keywords: emotion, concepts, multiple correspondence analysis, usage-based, corpus linguistics

The experience of emotion is high-dimensional. Emotions involve bodily sensations, mental contents, and associated behaviors, and unfold in the context of personal motivations, social relationships, and physical surroundings (Barrett et al. 2007). Because of this, modeling the meaning of emotion words is a theoretically relevant task (Kousta et al. 2011): how are these rich, embodied concepts represented in the mind and instantiated in language? Modeling emotion word meaning is also practically relevant, as it can provide insight into individual and cultural differences in how people experience themselves in relation to the world (Lindquist 2017). The meaning of emotion words is commonly quantified in terms of valence (pleasantness) and arousal (activation), as well as abstractness and imageability, by asking survey participants to provide explicit ratings (Altarriba, Bauer & Benvenuto 1999; Warriner, Kuperman & Brysbaert 2013). Researchers have also used corpus-based methods to construct and compare profiles of emotion words in natural language (Krawczak 2014). These approaches reveal important insights into emotion words, but overlook the personal, social, and physical contexts in which they are used, and which also contribute to their meaning.

I address this gap by applying corpus-linguistic methods to a unique database of emotion words used in real-world experiences. As part of a larger study of emotion in daily life, US English-speaking participants ($N = 50$) received 6-10 smartphone prompts per day for 14 days, at each prompt providing a label for their current feeling, indicating if they were currently with anyone else, and describing what they were currently doing. Participants' cardiovascular signals and gross bodily movement were also continuously recorded using a system of sensors. Using these data, I conducted a multiple correspondence analysis (Glynn 2014) to characterize the meaning of six emotion words that were frequently used by participants ("amused", "bored", "excited", "focused", "relaxed", "stressed"). I modeled these words relative to four contextual features: social situation (alone, with others); activity (work, leisure, non-work task, computer, eating); posture (sitting, standing, reclining); and physiological arousal (represented by recent increase, decrease, or no change in sympathetic nervous system activity).

A plot of the first two dimensions identified by the analysis revealed interesting relationships between the emotion words and their context of use. The first dimension roughly distinguished work from non-work activities, with "focused", "bored", and "stressed" on one side, and "amused", "excited", and "relaxed" on the other. The second dimension captured physical aspects like energy and posture: "relaxed" was associated with reclining, whereas "excited" was closer to standing. A 'stress' cluster also emerged, wherein "stressed" was associated with sitting, the presence of social others, increases in physiological arousal, and (to a lesser extent) work. These findings extend previous corpus linguistic work by demonstrating how emotion word meaning can be modeled using context features measured in the world rather than inferred from surrounding language. They also extend prior psycholinguistic work by illustrating how contextualized emotion word meanings can be derived from different modalities, beyond self-report. As such, this approach has the potential to bring new perspectives to embodiment and embeddedness in the language for emotion.

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Bridging corpus and norm: Mandarin sensory adjectival phrases

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Keywords: ABB, Chinese, ideophones, norming studies

The well-studied Mandarin ABB construction (T'sou 1978; Cáo 1995; Wang 2014) consists of a content word followed by a reduplicated syllable that makes the whole more vivid (Huang, Jin & Shi 2016), e.g., wù-mángmáng 霧茫茫 'fog-unclear.unclear' "extremely foggy". Because of this vivid quality, ABB constructions have been argued to consist of ideophones (BB) preceded by prosaic collocates (A) (Lu 2011; Van Hoey 2020; 2023; Zhào 2021).

In a corpus-driven study (Van Hoey, 2023), it is concluded that ABB phrases in Mandarin are not a homogeneous group, but are prototypically structured, depending on which lexical statistic is considered, e.g., type and token frequency, dispersion across the corpus, and attraction and repulsion between collocate (A) and ideophone. However, while these different degrees in salience may indeed be observed in the corpus, it is not clear whether these different degrees of salience are also present in Chinese speakers' minds. Can we really rely on findings based on textual data alone, or can such models be improved by turning to behavioral data as well? Previous studies (Dąbrowska 2016; Klavan & Divjak 2016) have argued for cross-validation between data obtained from the corpus and experiments. In other words, we need to study ABB constructions from multiple perspectives to arrive at a comprehensive understanding of their usage and structuring across the lexicon.

To complement the corpus-based perspective of ABB words (Van Hoey 2023), our experiments examined different sets of decontextualized subjective rating variables, namely familiarity, valence, imagery, concreteness, sensory experience ratings (SER), iconicity and arousal (e.g., see Yao et al. 2016). Participants consisted of native speakers of Mandarin Chinese (n = 519 in total, on average n = 74 per variable). Each stimulus was rated at least 30 times. Imagery, concreteness, SER and familiarity are highly correlated with each other ($r > 0.85$). As expected, familiarity also highly correlates with token frequency ($r = 0.59$). However, we found strong inversed correlations between the token frequency and dispersion across genre ($r = -0.67$), highlighting the lexical specificity of sensory phrases like ABB, i.e., they will be used quite frequently, but only in limited contexts.

Bridging textual and behavioral data, it turns out that dispersion is the strongest negative predictor for SER, iconicity, concreteness, imagery, and familiarity, while token frequency (and not type frequency) is the strongest positive predictor for these subjective variables. Surprisingly, we found only weak ($r = 0.12$) to unsignificant correlations between the two lexicostatistic measures that probed compositional aspects of ABB constructions (attraction and repulsion) on the one hand, and the subjective behavioral variables on the other hand. This indicates that ABB items tend to be processed on the compound or phrasal level rather than on the compositional level, i.e., provides support against the compositional fallacy (Langacker 1987). We also conclude that corpus data and behavioral data do not necessarily lead to the same understanding of this linguistic construction.

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An agent-based modeling approach to the evolution of stress pattern diversity in English

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Keywords: Usage-based linguistics, language evolution, computational linguistics, lexical stress

We lay out a usage-based explanation for the evolution of stress pattern diversity in languages such as English and present it in the form of an agent-based model. We find that the predictions derived from such a model are in line with empirical corpus data. Thus, we hope to contribute to the overall theme of the conference by showing how agent-based models can help to integrate diachronic, usage-based and evolutionary modes of linguistic analysis.

Previous accounts have treated English word stress mostly as a function of phonological structure, particularly focusing on the effect of syllable weight (Chomsky, 1968; Hayes, 1982; Burzio, 1994). However, items like in (1) defy such explanations, as they are structurally equivalent in terms of weight but still take different stress patterns.

(1) a. **lén**til vs. ho**tél**
b. **Cá**nada vs. ba**ná**na
c. **ín**crease (N) vs. in**créase** (V)
d. **ré**search (N) vs. re**séarch** (N)

Additionally, competence-centred approaches do not address the question why a language should accommodate diverse and variable stress patterns in the first place.

Building on insights from experimental research (Kelly & Bock, 1988), our model assumes that a word's lexical stress pattern is sensitive to the speech rhythm arising in the syntagmatic contexts it tends to occur in. Physiological and cognitive constraints (Lehiste, 1970; Pitt & Samuel, 1990; Peelle & Davis, 2012) favour an alternating rhythm in speech (Hayes, 1984; Selkirk, 1984; Schlüter, 2005). Through repeated cycles of speech production, perception and acquisition (Kirby & Hurford, 2002) or exemplar adjustment (Wedel, 2006), these preferences can affect lexical stress diachronically by biasing words or entire word classes towards those patterns which most successfully produce alternating rhythms in combination with other words (Kelly, 1989) (2).

(2) a. the **ín**crease wórries us
b. híkes in**créase** the cóst of living

In evolutionary terms (Croft, 2000), the rhythmic preferences operating at the level of phrasal phonology exert a selective pressure on lexical stress patterns, constantly testing their viability within their usage contexts.

We choose agent-based simulation as a method for probing this line of argumentation. The agent population in our model is made up of constituent types (i.e. a proxy for lexical items) defined by linguistic attributes, notably stress pattern, syllable weight and morpho-syntactic class. In each round of the simulation, a predetermined number of agents are probabilistically selected to occur and interact with one another within one of a range of possible syntagmatic contexts to form a rhythmic phrase. The phrase is evaluated with respect to prosodic criteria (rhythmic alternation and weight-to-stress) and the agents are rewarded or penalized accordingly. These payoffs continuously update the agents' fitness attribute, which in turn determines the agents' chances of successfully reproducing into the next generation.

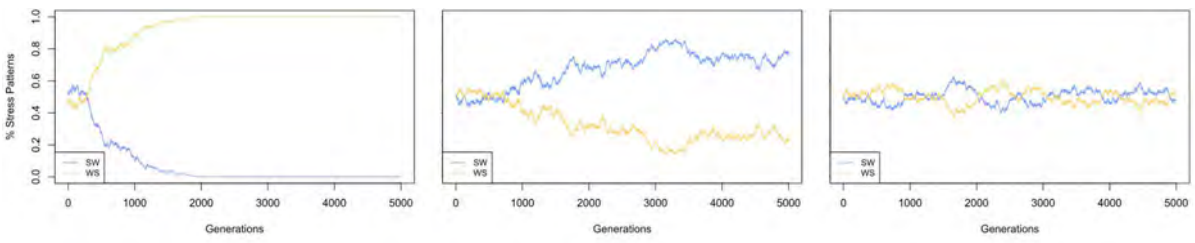

Fig. 1: Evolution of stress patterns in disyllables. ABS based on hypothetical languages with low (1a, left), moderate (1b, middle), and high proportions of monosyllables (1c, right)

The simulation suggests that stress pattern diversity will stably establish itself if the occurrence contexts of polysyllables also include monosyllabic material at a sufficiently high rate (Fig. 1). In such a setting, diverse rather than uniform lexical stress patterns will reduce the likelihood of rhythmically suboptimal clashes and lapses. This prediction matches empirical data derived from the Penn-Helsinki Parsed corpora of English (Kroch & Taylor, 2000; Kroch et al., 2004, 2016).

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Semantic micro-dynamics as a reflex of occurrence frequency. A semantic networks approach

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Keywords: Semantic change, computational linguistics, corpus linguistics

Despite a long tradition of semantic change research (Paul, 1985), many of the factors involved in the process are still poorly understood. In particular, predicting change has remained elusive. This study seeks to contribute to our understanding of the parameters conditioning and influencing diachronic variation in lexical meaning by investigating the link between semantic change and frequency of occurrence.

Inspired by the achievements of recent large-scale studies employing state-of-the-art methods from the field of natural language processing (Hamilton et al., 2016; Tahmasebi et al., 2018), we approach word semantics from a distributional perspective. That is, we assume that a word's meaning is (at least in part) determined by, and can be expressed through, the linguistic context it customarily occurs in. We conceptualize this link in terms of exemplar theory (Nosofsky, 1988; Bybee, 2007). Thus, the semasiological dimension of a word can be thought of as an exemplar cloud around its lexical form, made up of rich, multi-modal memory traces of situations, objects, actions, or, broadly speaking, contexts in which a speaker-listener has experienced the lexeme being applied. Crucially, this also includes its habitual linguistic context (Bybee, 2013).

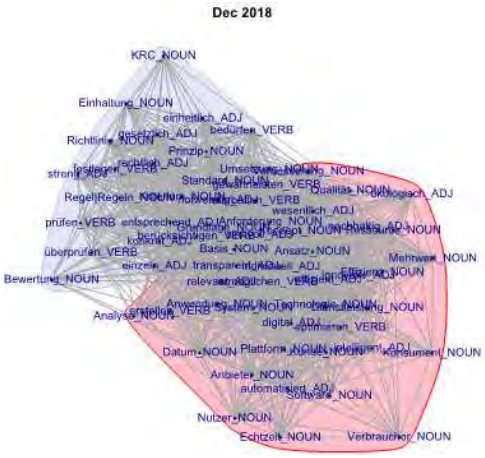

Fig. 1: Semantic network for the item transparent_ADJ, Dec 2018

We use embedding-based semantic networks (Hughes & Ramage, 2007; Akkasi & Snajder, 2021) (Fig. 1) to capture this link between lexical form and usage context - as reflected in a large linguistic corpus - and compare the networks diachronically in terms of their degree of similarity (Horn & Johnson, 1985). Our data come from the Austrian Media Corpus (AMC) (Ransmayr et al., 2017), whose size and high temporal resolution allow us to focus on microscopic variations in usage, measuring network similarity and word occurrence frequencies at monthly intervals.

The results of the regression analysis confirm that high occurrence frequency has a stabilizing effect on the semantic representations of words (Hamilton et al., 2016). We interpret this effect in terms of cognitive entrenchment: the more frequently words occur in the ambient language, the more stably they become entrenched in the minds of speakers alongside memory traces of the usage contexts they occur in.

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How Framing Influences Understanding and Acceptance: The Case of Polyamory

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Keywords: Framing, Neologisms, Conceptualisation

Language is a source of power, as the way in which a message is realised can influence how it will be received (Matlock 2012: 478; Thibodeau & Boroditsky 2013). A society decides which discourses are socially acceptable and which are not (Foucault 1971). As such, language discriminates against minorities, but also, it can in reverse function as a tool to shift power dynamics and to give a voice to minority groups. This project focuses on language used by polyamorous communities in Germany who show considerable effort to rewrite language to tell their stories in their own words (Haritaworn, Lin, & Klesse 2006: 518–519). In western cultures, dual monogamous relationships dominate common discourse (cf. Foucault 1971), with expressions such as “couple”, “partner”, or “better half ” (Ritchie & Barker 2006: 591). The discourse of relationships therefore fails to provide language that reflects the realities of polyamorous people (Ritchie & Barker 2006: 589) which leads to people in these communities “feel[ing] constrained” by language (Ritchie & Barker 2006: 589) and people on the outside failing to understand polyamorous realities and reinforcing “social stigma” (Cardoso, Pascoal, & Maiochi 2021: 1240) around polyamory. Through neologisms, polyamorous communities have started to “actively rewrit[e] the language of love, relationships and emotion” (Ritchie & Barker 2006, 598) to gain visibility and legitimisation outside of the community, and to be able to talk about their experiences in a way that feels right.

The subject of this project is to investigate how successful neologisms arising in the context of polyamory are in promoting understanding and acceptance of polyamorous realities. 50 German speaking participants were tested on their understanding and acceptance of concepts related to polyamory in German depending on the words used to denote these concepts. Split into two groups, they were asked in an interview to describe either the meaning of the neologisms *Polyamorie* (‘polyamory’), *Polykül* (‘polycule’), *Metamour*, and *shaky* or the terms *Nicht-Monogamie* (‘non-monogamy’), *Mehrfachbeziehung* (‘multiple relationships’), *Partnerin meiner Partnerin* (‘partner of my partner’), and *eifersüchtig* (‘jealous’) which are either existent as such in mononormative discourse or use terms from this discourse as conceptual scaffold. The participant’s understanding and conceptualisations of these terms were multimodally analysed with the video-recorded interview material, considering both speech and gestures. Their acceptance of polyamory was elicited with a questionnaire and an Implicit Association Test (IAT) which is a psychological test designed to indirectly elicit bias. In this test, participant’s reaction time is measured when sorting stimuli into categories. One set of stimuli were pictures of monogamous or polyamorous constellations and positively and negatively connotated attributes of relationships. With positive and negative categories on a fixed key, polyamory and monogamy switch sides during the test. A bias towards monogamy shows when participants take longer to sort polyamorous pictures to the side of positive attributes.

The analysis shows that in most cases, the understanding and underlying conceptualisations of the opposed terms differ considerably and there was a statistically significant difference found in acceptance between participants who were exposed to the different terms.

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Corroborating corpus data with elicited introspection data: A case study

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Keywords: negative data problem, corroborating corpus data, magnitude estimation

The exponential growth in corpus size over the last three decades has led to a proliferation of corpus studies. However, these come with limitations: Corpora are *finite* samples of language (Hoffmann 2019: 17), whereas language is by definition *infinite* (Chomsky 1965: 6). This leads to the **negative data problem** ("just because a phenomenon cannot be found in a corpus, it cannot be concluded that it is ungrammatical" (Hoffmann 2011: 1)) and the **positive data problem** ("just because a construction appears in a corpus it does not automatically follow that it is grammatical" (Hoffmann 2011: 1)). Therefore, corpora can never be considered fully representative of a language.

One solution is corroborating corpus data with elicited introspection data. I present a case study to show how this can be achieved using the Magnitude Estimation Test (MET) method (Bard et al. 1996; Cowart 1997: 73-84, Hoffmann 2011, Hoffmann 2013), which takes advantage of the fact that humans are better at making relative judgments than absolute judgments (e.g. Likert scales). METs also feature grammatical and ungrammatical fillers, providing 'baselines' against which test items can then be compared.

Specifically, I investigate the acceptability of optional *that*-complementizers in the English Comparative Correlative (CC) construction ([*The more we get together*]$_{C1}$, [*the happier we'll be*]$_{C2}$). The CC consists of two subclauses, C1 and C2; *that*-complementizers are optional in C1 (1) and have been claimed to be possible in C2 (2) in "colloquial registers" (den Dikken 2005: 402; see also Hoffmann 2019: 47) (2):

(1) [*The more* **[*that*]**$_{\text{optional THAT-complementizer}}$ *he says*,]$_{C1}$ [*the less I wanna say*.]$_{C2}$
(2) [*the larger the settlement becomes*]$_{C1}$
[*the less* **[*that*]**$_{\text{optional THAT-complementizer (?)}}$ *the reduced number of sites you will have available.*]$_{C2}$

However, the CC construction is extremely infrequent; Hoffmann et al. indicate a per-million-word frequency of 30-40 (2019: 32). The same applies to *that*-complementizers; in their 2,041-token BNC data set of comparative correlatives, Hoffmann et al. (2020) found just 29 C1 *that*-complementizers and two in C2, concluding that they are "no longer central properties" (2020: 200) of the Present-day English (PdE) CC construction. Any claims based on such sparse evidence are therefore subject to the negative/positive data problems.

To address this issue, I collected grammaticality judgments from 37 L1 American English speakers and normalized them as *z*-scores. The data were tested for significance using mixed-effects models. Fig. 1, which shows the *z*-score means obtained for C1, indicates that the presence of *that*-complementizers in C1 did not change participants' ratings significantly (this was confirmed by mixed-effects modeling). This suggests that they can indeed be considered grammatical (and optional). Fig. 2, however, shows that *that*-complementizers in C2 (*that*) were rated significantly worse than the alternative, i.e. no *that*-complementizer (Ø). This appears to be in line with claims about them being restricted to colloquial speech (although as pointed out by an anonymous reviewer the underlying reasons – i.e., register – have not been conclusively determined). Thus, it was possible to corroborate findings from corpus studies and address the negative/positive data problems, proving that generally the MET method is indeed viable for complementing corpus data.

Furthermore, the study has led to new findings: Despite being rated worse than the alternative (Ø), *that*-complementizers in C2 must be considered grammatical, since their *z*-score mean is much closer to the grammatical filler mean than the ungrammatical filler mean. This has implications for analyses of the English CC as a hypotactic construction: If *that*-complementizers were indeed markers of subordination (cf. e.g. Borsley (2004) and den Dikken (2005)), they should have been clearly rated as ungrammatical in C2, which under a hypotactic analysis functions as main clause.

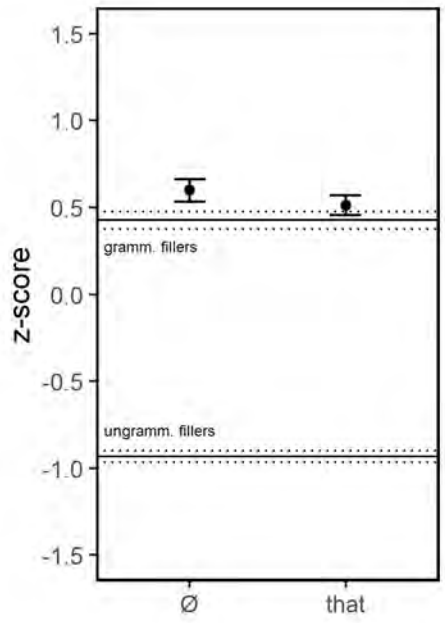

Fig. 1: Z-scores of C1 that-complementizers (n=37)

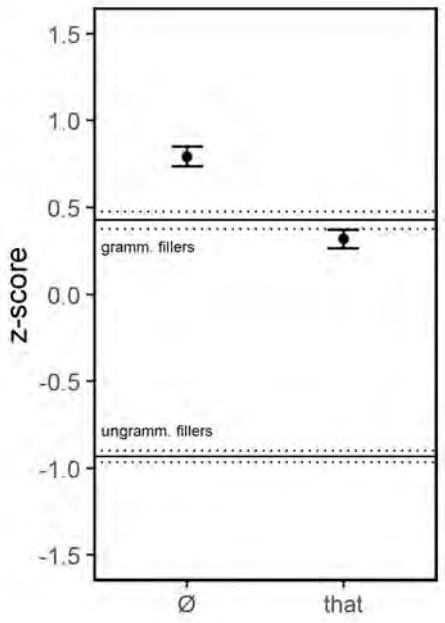

Fig. 2: Z-scores of C2 that-complementizers (n=37)

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Psycholinguistic evidence against frequency effects for multi-morphemic sequences in Japanese

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Keywords: Usage-based models of language, Frequency, Multi-word sequences, Multi-morphemic sequences, Japanese

Usage-based theories of language predict that speakers store linguistic patterns of varying sizes and schematicity, including lexically specific constructions such as collocations, of which meanings are predictable from their respective component parts (e.g., Wray 2002; Goldberg 2019). One question that has garnered attention is what factors are involved in the vast storage of lexically specific constructions. Among a variety of factors that have been investigated, the effects of token frequency have been particularly studied and discussed. Some psycholinguistic studies show that speakers are sensitive to frequency information of multi-word sequences (e.g., Arnon & Snider 2010; Tremblay et al. 2011), while others cast doubt on the causal effect of frequency in the processing of multi-word sequences (e.g., Jolsvai et al. 2020). Due to a lack of cross-linguistic research on this topic, the processing of multi-morphemic sequences in agglutinative languages has not been previously investigated (Arnon 2021).

Building on this background, the present study investigates frequency effects for multi-morphemic sequences in Japanese. Specifically, the study aims to examine whether highly frequent multi-morphemic sequences are processed faster than their less frequent counterparts in an experimental setting. 24 item pairs of multi-morphemic sequences that differ in the first morpheme and the whole-string frequency (e.g., 基本-的-に-は [basis like COP TOP] (high), 技術-的-に-は [technology like COP TOP] (low)) are used in the experiment. In addition to controlling for frequencies of the first unigrams (e.g., basic [基本] and technology [技術]), other potentially confounding variables such as the number of characters, morae, Kanji (Chinese character), and compositionality of meaning are all matched within an item pair. Processing speed is measured in a phrasal decision task in which participants are asked to judge whether the sequences that appear on the computer screen are possible sequences as accurately and quickly as possible (Arnon & Snider 2010).

The results show that there was little difference in reaction times between the high-frequency condition (mean 645.1 ms) and the low-frequency condition (mean 651.7 ms) in the phrasal decision task. A linear mixed-effects model corroborates the descriptive result and shows that frequency is not a strong or significant factor in predicting the reaction times. A post-hoc item analysis further reveals that the difference in mean reaction times between the high-frequency condition and the low-frequency condition is substantially different depending on the target item. These results suggest the existence of another variable impacting the previous studies' findings of frequency effects for multi-word sequences. In light of the fact that highly frequent multi-word sequences and multi-morphemic sequences are often associated with discourse functions that may arguably be non-compositional (Biber et al. 2004; Kaneyasu 2012), the present results call for taking context-dependent meanings into account when studying the processing of recurrent sequences.

Gloss abbreviations
COP copula
TOP topic marker

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Countability of nouns and the use of articles in EFL classrooms

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Keywords: English countability, use of English articles, cognitive semantics

One of the toughest challenges with learning English for EFL (English as a Foreign Language) learners is its distinction between countable and uncountable nouns. This challenge is more pronounced for learners whose first languages are article-less. The research questions included: 1) What aids are usually used by learners in Taiwan in order to learn countability in English: translations, dictionaries, or grammar books? 2) What kind of nouns do they find most difficult to comprehend and use: count, mass, abstract nouns or others? 3) Will the explicit instructions enriched with the cognitive clues that emphasize the construal aspects of countability, help them learn countability better which in turn enhance the awareness of the use of articles (a/an, and the)? And 4) Whether a learner's English proficiency level will impact the outcome of learning. 83 college students of pre-intermediate level from an English Department completed the study. Convenient sampling technique was applied to recruit participants from four different writing classes for two experiments. In experiment one, a first year writing class and a second year writing class were selected to be the experimental groups. In experiment two, another first year writing class and a second year writing class were selected to be the control groups. The experimental groups were treated with instructions under the framework of cognitive semantics whereas the control groups were instructed with more conventional terminology and explanations. Both qualitative and quantitative data were collected and analyzed. For the first two questions, a set of qualitative data was generated from learners' self-reports. Then quantitative data was elicited by a pre- and post-test of a countability judgement test (Tsang, 2017) along with a recognition/correction test that consisted of a 341 words essay written by a student of similar proficiency background who did not participate in the study. Results demonstrate that the majority of the participants had not learned countability systematically before the treatment. They also did not know that mass nouns are flexible, depending on the 'boundedness' or 'atomicity' of an object or concept. The statistically analysis on the countability judgement test shows a significant progress at the post-test ($p < .001$ and $p = .001$) for both the experiment groups, and there is no significant difference between these two groups. The control groups made progress but not at a significant level. As for the recognition/correction test, both experimental groups made statistically significant progress (both $p < .001$). For the control groups, the first year participants' progress was not statistically significant; yet that of the second year was significant ($p = .004$). The difference between this group and the first experimental group was not significant but with the second year experimental group the difference was statistically significant, meaning that the experimental group performance was better. Such results suggest that explicitly teaching countability and the use of articles under the cognitive semantics framework, learners retained what they learned better and seemed to do better in the use of articles in judging definiteness, specificity and genericity. However, qualitative analysis of participants writing samples before and after interventions did not show significant changes in the use of articles in all groups. Subsequently error analyses highlight the difficulties many EFL learners face in acquiring English articles.

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Affective positioning in celebrity events:
The use of deictic terms for internet involvement

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Keywords: Chinese, deixis, discourse analysis, affects

In addition to identifying the space, time, interpersonal, discourse, and manner of a reference in relation to the deictic center, the construction of the deictic mental space can be deployed for locating and indicating the involvement of the speaker, a phenomenon known as affective positioning (Giaxoglou 2015). In a series of discourse studies, van Kieken and many researchers have also pointed out that professional journalists also employ the best viewpoint in news narratives to achieve the intended effects (van Krieken et al., 2019; van Krieken & Sanders, 2019). In the age of digitalization when internet users are actively participating in the report of social events, the perspectives they take to construct the social sphere with themselves in it is investigated in the current study. Special focus has been placed on deictic terms which are claimed in linguistic theories to play a crucial role of viewpoint construction. Two events have been tracked: (1) Post-divorce of Barbie Hsu and (2) Sung's church events. They are the most-talked-about events in entertainment news of Taiwan during 2022~2023. In the developments of these events, the celebrities issued official declarations or posted on their personal FB/Weibo to attack others and to defend themselves from accusations of infidelity, domestic violence, gaslighting, deception, accumulating wealth, etc. Internet users' use of deictic terms have been analyzed in relation to their roles (general users, journalists, celebrities themselves) and the information they provide (personal experience, journalist expertise, history of the entertainment circles) to put themselves in the discourse. Our analysis shows that general internet users, though not actually involved in the events, used first and second person deixis to demonstrate their authorship and involvement. Proximate deixis was employed to express positive feelings and attitude, such as love and trust. Meanwhile, intersubjective uses of deixis, such as deictic projection (cf. Lyons 1977) and peudo-inclusive pronouns, have also been found. On the contrary, remote deictic expressions have been used for mental distancing, such as criticism, accusations, and indifference. This study fills the gap of deixis studies at a discourse and sentiment level.

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A Cognitive Approach to Personification

in Chinese Courtroom Discourse

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Keywords: conceptual metaphor, courtroom discourse, personification

Conceptual metaphor is not merely a way of rhetoric but a matter of thought and action. It is categorized into three types: structural metaphor, ontological metaphor, and orientational metaphor. Personification is one kind of ontological metaphor. It means that a non-human entity is conceptualized in terms of human motivations, characteristics, and activities, indicating that we understand our experience in terms of persons. Personification is identified as one of the most common and instinctive metaphorical expressions because the shared and basic experience of human beings provides an opportunity to express many different ideas by comparing things to living entities (Lakoff and Johnson,1980). It involves a cross-domain mapping between a human source domain and a non-human target domain.

In this paper, the authors collect some cases in Chinese courtroom, which are from this website http://tingshen.court.gov.cn/. Then, based on the methods for linguistic metaphor identification such as MIP (Pragglejaz Group, 2007) and MIPVU (Steen et al., 2010), the authors extract some personification, and study the working mechanism and functions of personification in courtroom discourse. This paper has some findings as follows: (1) categories of personification in courtroom discourse include conventionalized personification, novel personification, default personification and personification-with-metonymy; (2) the working mechanism of personification is mapping which includes three aspects: domains, cross-domain mapping and invariance principle; (3) the functions of personification in courtroom discourse is mainly composed of rhetorical function, cognitive function and social function. The study proves that personification is pervasive in Chinese courtroom discourse and is inseparable from people's daily life.The result of the study can contribute to a deep understanding of personification in courtroom and broaden the application scope of the theory of conceptual metaphor. Meanwhile, it is of some help to discourse analysis.

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Recursivity in polylexemic compounding from a cognitive linguistic perspective

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Keywords: Compounds, Productivity, Entrenchment, Schematization, Recursivity

Huber (forthc.) has shown that there are measurable differences in the productivity of compounds, i.e. the extent to which compounds are used for the repeated formation of more complex compounds. Some compounds like *football* or *health care* are highly productive, forming a paradigm of multi-word compounds (e.g. *football game*, *football coach*, *football shoes*; *health care reform*, *health care system*, *health care provider*), while others like *body mass* or *world heritage* are only seldom encountered in more complex compounds. Furthermore, compounds show different degrees of productivity depending on whether they are used as a head or as a modifier in multi-word compounds. Speakers form, for example, considerably more complex compounds with the pattern '*football* + Noun' than with 'Noun + *football*'. The analysis of the slot-fillers used in these patterns (Huber forthc.) has shown that these nouns tend to form semantic clusters. The noun-slot in the pattern '*football* + N', for example, is commonly taken by words from the area of media coverage or agents in the frame of FOOTBALL (e.g. *football magazine*, *football scandal*, *football report*, *football movie*; *football wife*, *football man*, *football guy*, *football dad*). My talk will target the following questions: (i) How is this knowledge on the productivity of a compound cognitively available? (ii) How does a compound's mental representation influence its productivity?

I will sketch a proposal that aims to explain in what ways the use of patterns that give rise to polylexemic compounds affects the organization of the cognitive network. In line with usage-based cognitive approaches to word-formation, I will draw on the processes of entrenchment and schematization. The descriptions will deviate slightly from those found in mainstream construction grammarian approaches (e.g. Langacker 1987; Goldberg 2006), suggesting that the repeated use of linguistic elements is cognitively represented in a more dynamic way than is traditionally assumed. Based on Schmid (2020), I will argue that different degrees of productivity can be explained through more and less strongly routinized symbolic, syntagmatic and paradigmatic associations in the cognitive network. This will allow to demonstrate why more strongly entrenched compounds are more available as building blocks for polylexemic compounds. These explanations aim to deepen the understanding of the storing, processing and formation of polylexemic linguistic units.

The line of argumentation is based on a database of 57,741 triconstituent noun compounds of the English language, extracted from the COCA. This database provides the figures for measuring the productivity and entrenchment of two-word compounds. It is also used as an input for a vector-space analysis that allows depicting the semantic similarity of the slot-fillers used in exemplary patterns that give rise to triconstituent noun compounds. Figures from this database will also serve to illustrate the varying degrees to which the different kinds of associations can be assumed to be routinised.

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Liberating energy: Investigating physicists' use of anthropomorphic cognitive metaphors when modeling matter-energy interactions in English and German.

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Keywords: Cognitive metaphor, Contrastive linguistics, Physics

In physics, terms relating to the restriction or granting of freedom are frequently employed in the context of matter-energy interactions, as evident in phrases such as "a photon is captured" and "energy was liberated". However, the philosophical concepts of freedom and liberty relate to sentient beings with rights and abilities to make decisions, meaning physical interactions between matter and energy do not literally involve freedom or liberty at all.

This work examines for the first time the hypothesis that physicists' language choices which attribute freedom to certain physical phenomena indicate the existence of related anthropomorphic cognitive metaphors (CMs). It builds on previous investigations into ontological cognitive metaphors (OCMs) for the concepts of energy and heat in physics. However, whereas earlier research focuses on the connections between inanimate phenomena through substance-based OCMs, such as energy as a liquid material, this work opens up a novel and potentially rich area of enquiry into cognitive models relating fundamental physical phenomena to the field of human interactions.

A specific group of frequently occurring metaphors, termed matter-energy confinement metaphors (MECMs), is defined and the results of an extensive series of empirical experiments to investigate their use by physicists are presented. The impacts of the use of MECMs on physicists' reasoning about specific physical processes, such as nuclear fission or particle annihilation, are examined using a methodology adapted from Thibodeau & Boroditsky and the surface-level features of MECMs are investigated via a large-scale online survey.

These experiments are conducted in parallel with separate groups of both English and German speakers. By exploring details of the use and effects of MECMs across two languages this work is also the first to allow a direct comparative analysis of both how these metaphors are encoded in language use and the underlying cognitive models they relate to.

The ultimate intention of this research is to establish concrete suggestions for language use among those teaching and learning about energy in physics, particularly in mixed language teaching environments such as those found at many German universities and research institutes.

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(A)symmetry of Spatial Verticality in Mandarin: A corpus-based conceptualization of *shàng* and *xià* space particle constructions

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keywords: verticality symmetry, Mandarin Chinese, cognitive semantics, quantitative corpus linguistics, near-synonym, spatial construction

Mandarin is rich in the expressions of space and spatial semantics. The present study sheds light on the functions and connotations of a series of synonymous space particle constructions (SPCs) associated with the vertical postpositions *shàng* 'on' and *xià* 'under' in Mandarin: [… (*shàng*|*xià*)], [*…**zhī***(*shàng*|*xià*)], [***zài****…*(*shàng*|*xià*)], and [***zài****…**zhī***(*shàng*|*xià*)]. Cai (2013) maintains that spatial circumpositions (i.e., *zài…shàng*) are the typical form of spatial semantic representation, in which the preposition *zài* is weakened and functions merely as a location marker while the postposition (*shàng*) itself sufficiently takes over the spatial meaning. Zhang (2000) also asserts that all the prepositions that come before the locative prepositional phrases are omittable. Meanwhile, according to Chinese dictionaries, ***zhī*** is a grammatical word that is identical to *de* and can be marked as an adposition in spatial constructions. Although prior research mostly considered these four constructional variants equivalent, this study aims at exploring the unique semantic properties that underlie these near-synonymous SPCs under the hypothesis that true synonyms are rare (Saeed, 2011). The data were retrieved from the latest written version of Corpus of Contemporary Taiwanese Mandarin (COCT), one of the largest and representative corpora in Taiwan. An estimated 670,000 concordance lines for *Shàng* and 200,000 for *Xià* were retrieved and incorporated into the statistical analysis. We conducted a multiple distinctive collexeme analysis (Gries and Stefanowitsch, 2004) for *shàng* and *xià* SPCs respectively. The four variants for each vertical space particle involves the manipulation of two factors, with(out) ***zhī*** and with(out) *zài*. The comparison on the verticality were based on the semantic features extracted from the most distinctive collexemes of both constructions. Our analysis suggests several symmetrical behaviors for the vertical SPCs. *Zhī* attracts animate entities (e.g., *dì wáng ZHĪ SHÀNG* 'above emporer'; *bǐ jiào ZHĪXIÀ* 'under comparison'), and *zài* induces semantic prosody, attracting more unexpected negative and positive co-occurring lexical items (landmarks; LMs) (e.g., *ZÀI wèn tí SHÀNG* 'on the problem'; *ZÀI zhī chí XIÀ* 'under support'). Additionally, the bi-character LMs tend to cooccur with constructions including ***zhī*** (viz., […***zhī***(*shàng*|*xià*)] and [*zài…**zhī***(*shàng*|*xià*)]), and the monosyllabic LMs favor the single-word SPCs (i.e., […(*shàng*|*xià*)]); these may due to the prosodic tendency in Chinese (Lin et. al, 1993). On the other hand, these two sets of SPCs demonstrate a few distinctive asymmetrical behaviors. [*Zài_shàng*] among *shàng* SPCs cooccurs with over half of the distinctive concrete LMs, whereas it is […*xià*] among *xià* SPCs that favors the bulk of them. We posit that these asymmetrical preferences may be attributed to the markedness of the postpositions *shàng* and *xià*. Since *shàng* is in the cognitive level more prominent and is the concept people tend to fetch first (Jingfei, 2019), features of unmarkedness, it requires *zài* to narrow down the senses to collocate with concrete lexemes. In contrast to the aforementioned symmetric animateness for verticality, for all *xià* SPCs, both NP and VP are involved in the most distinctive LMs, while VP is rarely seen in *shàng* SPCs. This may be associated with the conceptual complexity of *shàng* becoming a topicalizer within SPCs.

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Quantity scales vs. intensity scales: degree modification of quantifiers in Finnish.

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Keywords: quantifier, degree modifier, Finnish, Cognitive Grammar

Degree modifiers (DM) are scalar expressions that modify other words, typically adjectives and adverbs, by relating their meaning to a scale. Some DMs indicate an open scale ('somewhat', 'very'), others, a closed scale ('almost', 'completely'; cf. Paradis 2001; Kennedy & McNally 2005). I present a Cognitive Grammar account of Finnish DMs as modifiers of quantifiers, and the conditions that regulate their compatibility. My starting point is that both quantifiers and DMs express a scalar meaning, but of a different kind. The scalar meaning of an (absolute) quantifier is based on a quantity scale, which begins from zero and increases indefinitely (Langacker 2016 uses the term *measurement scale*), while that of a DM is based on an intensity scale, of which there are several types. I argue that a quantity scale and an intensity scale are conceptually different. When a DM modifies a quantifier, it expresses an intensity scale adjoined to the quantity scale and elaborates the meaning expressed by the quantifier. For such a combination to be felicitous, the quantity scale and the intensity scale need to be compatible. This is why some combinations are felicitous (e.g., *melko usea* 'rather many', *melkein kaikki* 'almost all'), while others result in ill-formedness (**melkein usea* 'almost many', **melko kaikki* 'rather all'). I test my own intuitions by conducting an acceptability-rating questionnaire to native speakers of Finnish.

Quantifiers measure either masses ('a lot of milk') or discrete entities ('many books'; Langacker 2016). I focus on two main classes of Finnish quantifiers: mass quantifiers such as *vähän* '[a] little', *paljon* 'a lot of' or *tarpeeksi* 'enough', and number quantifiers such as *usea* 'many', *muutama* 'several; a couple of', or *harva* 'few'. The quantity scales expressed by both types can be either open or closed. For instance, *vähän* 'little' is a normative quantifier and presents a negative scalar assessment of a decreasing quantity that approaches the limit of zero, while its antonym *paljon* 'much' gives a positive assessment of an increasing quantity with no upper boundary. This difference has an effect on their compatibility with DMs.

My general result is that DMs of an open scale (*melko* 'fairly', *hyvin* 'very', *äärimmäisen* 'extremely') are compatible with normative quantifiers (*vähän* 'little', *paljon* 'much', *harva* 'few', *usea* 'many'), which behave like adjectives by setting up pairs of antonyms separated by a norm. In contrast, closed-scale DMs are compatible with quantifiers whose quantitative meaning includes a limit. In many cases, the limit constitutes a maximal quantity (*aivan tarpeeksi* 'quite enough', *melkein jokainen* 'almost everyone'). However, normative quantifiers with a decreasing viewing direction (*vähän* 'little' or *harva* 'few') can invoke zero as their minimum limit ('maximally few/little'). The more precise the limit expressed by a quantifier, the better the closed-scale DMs suit to modify it.

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Zum Brüllen komisch. Intensifying with verbal constructions. A corpus-based study in German and Spanish.

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Keywords: Cross-linguistic Construction Grammar, constructional idioms, intensification function, tertium comparationis, continuum of idiomaticity

The analysis of partially filled phrasal patterns endowed with a global pragmatic meaning represents one of the most fruitful and innovative areas of research in the development of the Construction Grammar - phraseology intersection. It is precisely from constructionist approaches that these structures are in the spotlight since they have a high flexibility in the renewal of the slots in the discourse and are characterised by a productive structure. Interlingual descriptions of these phenomena are, however, rather scarce (see Mellado Blanco, Mollica & Schafroth 2022). Construction Grammar has mostly been the subject of study of a single language, particularly under the assumption that "constructions themselves are language-specific" (Croft 2001: 6).

Against this background, contrary to Croft's belief, we argue that constructional idioms can be compared cross-linguistically departing from the semantic description (including discourse-pragmatic and functional factors) as a first step towards a tertium comparationis, while advocating for a holistic description of constructional idioms in the quest for a functional equivalent (Ivorra Ordines 2021). For the present study, two key aspects are essential when looking for a tertium comparationis: formally speaking, it must include an adjective, a preposition and an infinitive and, semantically-pragmatically speaking, the illocutionary function must be the intensification of the adjective.

(1) Aber muss es dann ein enges Hemd sein, wo die 3 Knöpfe auf Höhe des Bauchnabels bis zum bersten gespannt sind? (deTenTen20, 62243150)
(2) Pendlerzüge, sind wieder zum Bersten gefüllt, in Bussen und Bahnen herrscht zur Hauptverkehrszeit wieder drangvolle Enge. (deTenTen20, 204621972)
(3) Finalmente, llegó a su oficina, una pequeña habitación con pocos adornos exceptuando un par de fotografías de sus años de estudiante, una biblioteca repleta a rebosar y su escritorio de madera, antiguo y funcional. (esTenTen18, 1763382367)
(4) Algo insensible, nunca se la dado bien intentar subirle el ánimo a los demás desde su punto de vista, Chrome es fiel a morir, traicionar no está en su vocabulario, en algunas misiones, sus compañeros pueden admitir que Chrome se vuelve algo violenta y quizás demasiado bruta cuando alguien la saca de sus casillas. (esTenTen18, 4289285377)

As can be attested in the examples above, the German pattern [*zum* V ADJ] and the functionally equivalent Spanish pattern [ADJ *a* V], as interlinguistic related constructions, show different degrees of idiomatisation or pragmaticalisation conforming a continuum, which ranges from more or less literal meanings and moves over more or less figurative meanings (see Michaelis 2019).

According to the corpus analysis carried out with deTenTen20 and esTenTen18 corpus (Sketch Engine), the aim of the paper is twofolded: i) to examine the adjective slot fillers in both languages, in order to determine which qualities tend to be intensified by this construction in each of the languages; ii) to examine the fillers which renew the infinitive slot in each of the languages, in order to observe which verbs are prototypically used to designate the supreme degree in each language. In this sense, verbs whose meaning can be interpreted literally in certain contexts and verbs whose interpretation is only metaphorical are detected (idiomaticity continuum).

Modality and causation: Evidence from Finnish morphological causatives.

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Keywords: causation, modality, force-dynamics

The theory of force-dynamics views causative and modal verbs as semantically unified through the notional concepts of CAUSE and ENABLE (Talmy, 1988; 2000). A strong crosslinguistic evidence for the proposed conceptual relationship between causation and modality is provided by Finnish morphological causatives in which causative and modal (desiderative) meanings commonly arise in the same morphosyntactic environment thereby indicating a shared conceptual base. The interpretation of the Finnish morphological causatives as causative vs. modal (desiderative) is determined by the semantic properties of the causer and its capacity to bring about the event actualization. Specifically, causatives with an intentional human causer receive the causative interpretation (1); causatives with inanimate causer are interpreted as either causative (2a) or causative with a modal flavor (2b); and causatives with a syntactically unexpressed causer receive the modal interpretation (3) (Ilic, 2013; 2014).

Building on the native speaker judgments presented in Ilic (2013; 2014), it is argued that the Finnish morphological causatives provide three kinds of evidence for the semantic unification of causative and modal meanings. First, causative and modal meanings can co-occur in a single interpretation of the same morphosyntactic structure, as in causatives with a modal flavor (2b). It is important to note here that this interpretation occurs only with inanimate causers and in contrast to the causative interpretation in (2a) it has no requirement with respect to actualization of the event. The causative interpretation with a modal flavor is therefore compatible with both actualized (4) and unactualized events (5). These data have an important implication for the nature of modality – they demonstrate that modality and event actualization are *not* mutually exclusive and that modality is consequently not confined to the realm of *irrealis*, as it is commonly held.

The second kind of evidence for the semantic unification of causation and modality is provided by the fact that, when the causative interpretation becomes unavailable due to the infelicitous match with a syntactically unexpressed causer, the construction is reinterpreted as modal, as in desiderative causatives (3).

The third kind of evidence demonstrating a semantically unified relationship between causation and modality comes from the fact that the modal desiderative meaning commonly arises as a non-cancelable presupposition, along with the asserted causative meaning, both in a single reading of a construction (6). It is exactly the presence of this modal presupposition which is claimed to give rise to the modal flavor in the interpretation of the causative in (2b). Modal presuppositions, understood as manifestations of causal relations and unconfined to *irrealis*, are also claimed to give rise to the asserted modal meaning in the desiderative causatives (3), which involve an infelicitous match between the morphosyntactic environment and the semantic properties of the causer. Modal presuppositions in desiderative causatives therefore provide a semantic basis for their reinterpretation, when nothing else can be stated about the event.

(1) Jussi naura-tt-i Maiya-a.
Jussi.NOM laugh-CAUS-3SG.PAST Maiya-PART
'Jussi made Maiya laugh.'

(2) Vitsi naura-tt-i minua.
joke.NOM laugh-CAUS-3SG.PAST I-PART
a) 'The joke made me laugh.'
b) 'The joke made me feel like laughing.'

(3) Minu-a naura-tt-aa.
I-PART laugh-CAUS-3SG.PRES
'I feel like laughing.'

(4) Vitsi naura-tt-i minua, ja nauroin.
joke.NOM laugh-CAUS-PST I-PART, and laugh.1SG.PST
'The joke made me feel like laughing, and I laughed.'

(5) Vitsi naura-tt-i minua, mutta en nauranut.
joke.NOM laugh-CAUS-PST I-PART, but not.1SG laugh.SG.PST
'The joke made me feel like laughing, but I did not laugh.'

(6) ??Vitsi naura-tt-i minu-a, mutta minua ei naurattanut.
joke.NOM laugh-CAUS-PAST I-PART, but I-PART neg.1SG laugh.PAST-PTC
'The joke made me laugh, but I did not feel like laughing (at the moment of laughing).'

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Explaining locative alternations in terms of frequency of use: A corpus-based diachronic approach to English *spray/load*-alternations

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Keywords*:* locative verb alternations; earlier occurrence – frequency; diachronic perspective

In accounting for cross-linguistic trends in the coding of causal-noncausal verb pairs, such as *break* (tr.)/*break* (intr.), Haspelmath et al. (2014) proposed, and provided corpus-based support for, an explanation in terms of usage frequency : In a causative verb pair, the causal member will be rarer than the noncausal member, while in an anticausative verb pair, the causal member will be more frequent than the noncausal member, Prediction 1, (hereafter P1). However, this explanation cannot be applied to English causal-noncausal verb pairs. Since English mostly uses the same verb form for the causal and noncausal verb use, the explanation does not follow the *form–frequency correspondence principle* (i.e., Languages tend to use less coding material for more frequent expressions, hereafter FFCP) that P1 is based upon. In Inoue (2022) I argue, by using causative-affixed verbs, that for a linguistic pair there is a strong correlation in terms of frequency between *form* and *earlier occurrence* and therefore, in place of the FFCP and P1, I propose the *earlier occurrence – frequency correspondence principle* (hereafter EOFCP) and the *prediction-for-causal-noncausal alternations* (hereafter PFCNA) based on EOFCP.

This study aims to test the above-mentioned proposal about a class of causal-noncausal verb alternations by applying it with necessary changes to another class of verb alternations. In this presentation the test is directed to the explanation of English locative alternating verb pairs, of the *spray/load* type.

Among verbs listed in Levin (1993) under the class of 'spray/load alternations,' 49-alternating verb pairs are found. What characterizes this class of verbs is that either 'locatum' or 'location' is permitted as its direct object, as shown below:

(1) a. X sprayed/loaded A on(to)/over/under/… B. (locative variant)
b. X sprayed/loaded B with A. (*with* variant)

Among the 49 pairs, after excluding the verbs whose initial attestation is uncertain and whose total number of occurrences is less than 15, approximately 40 remain. For decisions concerning the initial attestation of each use and its frequency, I mainly appeal to the *OED online* and the *BNC*, respectively, with historical corpora as tools to supplement the weaknesses of both tools.

Preliminary results suggest that since the verb form is the same in both variants the EOFCP is applicable as in the case of causal-noncausal verb pairs. However, for the prediction applied to these verb pairs, the PFCNA should be changed to the prediction-for-locative alternations (PFLA), as follows: In a locative alternating verb pair, if the initial occurrence of a locative variant member is attested earlier than the *with* variant counterpart, the *with* variant member will be rarer than the other counterpart, while if the initial occurrence of the *with* variant member is attested earlier than the locative variant counterpart, the *with* variant will be more frequent than the other counterpart.

Based on the results of a pilot survey, it is expected that the matching rate of PFLA for the approximately 40 verb pairs will amount to around 65%.

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Beyond definiteness: exploring epistemic and relational accounts of e-marked formulations in Persian interactions

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Keywords: Persian, definiteness, e-marked formulations, reference making, epistemics, relational connection and separation

Formal Persian language lacks a definite article, but in informal colloquial conversations, the particle '*e*' can be suffixed to the nominals to denote definiteness. This particle has been insufficiently described in the literature and even this insufficient description is solely based on constructed examples. The empirical investigation that underlies the present study examines the '*e*'-marked nominal formulations in the context of making references to persons, animals, and objects in naturally occurring conversations to identify its multifaceted functions. Using conversation analysis as a method, it is demonstrated throughout the paper that the enclitic *e* marks a noun or nominal group to denote both speaker and recipient's (assumed) equal epistemic access to the referent, although the speaker may need some interactional work with the recipient to share his epistemic access with them. Furthermore, through this marked way of reference formulations, the speakers do more than simply referring by orienting to some measure of relational separation with the referent and thereby some degree of connection with the recipient. Overall, the analyses reveal delicate moments of interactional work in terms of epistemic and relational functions of the *e*-marked formulations of the referents, and as such contribute to the research on the pragmatic and interactional view of definiteness in light of epistemics and relating of reference making.

Proposing a Radial Tree Network for the Diachronic Analysis of Blending

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Keywords: Radial Tree Network, Conceptual Blending, Diachronic, Twitter, Entrenchment

Contemporary cognitive linguistic studies are challenged to consider the social dimension of language (Croft 2009; Geeraerts 2010; Harder 2010) as a driving force for the study of linguistic structure and cognitive processes. Research in the discipline is claimed to apply methods of empirical kind (Fauconnier & Lakoff 2009; Geeraerts 2006; Sampson 2002), through the scrutiny of large corpora, and to affirm itself as a use-based model of language (Geeraerts 2006; Grondelaers, Geeraerts & Speelman 2007; Kristiasen, Achard, Dirven & Ibáñez 2006) at the level of actual discourse events. This piece of exploratory research follows foundational work on mental spaces (Fauconnier 1994, 1996, 1998) and conceptual blending (Fauconnier & Turner 1994, 2002, 2006), as well as research on image-schemas (Lakoff &Johnson 1980; Lakoff 1987; Oakley 2007), to understand how conceptual blending can be organized as a large diachronic network, in which the chronological order of discourse defines both the structure and the way meaning is blended. Likewise, it is relevant to uncover the way the social and cultural aspects of language, guided by an empirical corpus-driven methodology (Biber 2015), may operate in the aforementioned network, while also bearing in mind the many challenges imposed by computer-mediated communication. Previous studies have demonstrated that at the intersection of cognitive linguistics, pragmatics and discourse analysis, the relevant concepts of situatedness and embodiment (Cap 2013; Chilton 2004, 2005, 2010), as well as the technological affordances of the media (Kopytowska 2022) play a central role. Thus, this piece of research adds to the literature by proposing a radial tree network that adapts the multiple blend approach by Fauconnier and Turner (2002) by having the megablend at its core and individual blended spaces branching from it. The network will take a corpus-driven approach to the retrieval, selection and organization of data. While not losing focus of the imaginative and creative process of blending, the network makes it possible to identify elements for completion in previous discourse. Indeed, completion takes the main stage on the blended space and through it is possible to identify how several message spread in time have a clear cognitive connection. Through completion it becomes possible to identify patterns through which writers can force readers to blend, i.e., prompt them to copy their blends, which get, unknowingly, entrenched (Bybee 2006; Croft & Cruse 2004; Divjak & Caldwell-Harris 2015; Fauconnier & Turner 1998; Langacker 1987; Schmid 2010) in their mental spaces, causing simulated cooperation and proximity. Through the analysis of a corpus of 56572 tweets posted by Donald Trump, it became clear that the network can operate in both longer and shorter segments of time, depending on the amount of discourse produced around the mental space under analysis. When observing the mental space surrounding the context word country, limited to the tweets produced in 2013, it become clear that blends created in latter tweets pulled elements for completion from previous tweets, maintaining an intentional pattern of meaning, which followed a need by the writer to entrench his views in readers.

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Grief Metaphors with Low Conventionality and Sadness Intensity Evaluation in German Memorial Texts – An empirical study from the perspective of cognitive semantics

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Keywords: novel metaphor, grief intensity, conventionality, low-/high-conventional metaphor, memorial texts

The inextricable bonding of emotion and cognition has been confirmed in the cognitive research and in the research of neuroscience and cognitive psychology as well (see Clark & Fiske 1982; Arnold 2011; Davidson et al. 2003; Manstead et al. 2004). As one of the most constructive apparatuses to articulate, to express and to recognize internal emotional state or process, language usages need to be taken into account. Schwarz-Friesel (2013: 69) claims that the verbal parameters for describing emotions incorporate Quality, Duration, and Intensity. And emotional intensity can be expressed by means of utterances respectively from lexical, semantic and syntactic levels (e.g., rhetorical figures, etc.).

Metaphor, as a non-literal linguistic expression, is frequently uttered in memorial texts, while emotions, primarily the grief feelings, would be expressed either with higher or lower intensity. For instance, extremely different levels of sadness intensity will be implied among the german expressions such as “voller Trauer (Eng. full of sadness)”, “Trauerwelle (Eng. sadness wave)” and “Tonnen von Trauer (Eng. tons of sadness)” etc.

Bowdle & Gentner (2005) proposed that metaphor will depend both on their degree of conventionality and on their linguistic form. The Conventionality of metaphorical usage refers to the manner in which a metaphor is comprehended. According to the level of conventionality Skirl & Schwarz-Friesel (2013) classified then metaphors into five categories: dead metaphors, lexicalized metaphors, cliched metaphors, creative metaphors, and innovative metaphors.

In terms of discourse constructions, metaphor of higher degree of conventionality has a more solid structure, while metaphor of higher degree of conventionality has no fixed semantic or syntactic structure, and in extreme cases neither the tenor nor the vehicle of rhetorical figure appears in the novel metaphors. Werkman-Horvat et al. (2022) have then tried to illuminate the comprehension process from the perspective of Two types of metaphorical novelty: high-conforming and low-conforming.

In order to clarify a neuropsychological processing system of comprehension of Chinese metaphors, Wang et al. (2020) constructed the Conventionality-oriented Progressive Hierarchy (CPH) Model. They pointed out that “processing non-literal language constructs with lower conventionality needs more involvement of the right hemisphere of the brain (e.g., right hippocampus, right amygdala, right insula, and right precuneus)”. And the higher the degree of metaphorical conventionality, the easier the processing. Liu (2022) used a neuroimaging-based activation likelihood assessment (ALE) method to investigate the mechanism of novelty's influence on metaphor processing and found that conventional metaphors activated only the left hemisphere, while novel metaphors activated both hemispheres.

In order to investigate the correlation between conventionality degree and affective intensity of metaphors, this corpus-based qualitative study established a database of corpora, which are comprised of condolence and memorial texts within in past 10 years (2011-2021) in different types of discourses, such as mass media texts, SNS-posting and individual comments in forum.

The collected and registered corpora are classified into different groups in accordance with various research requirements and purposes.

After comparing the corpora, it was found out that high-conventional metaphor dominates a relatively fixed form. Simultaneously, the emotion intensity with a lower degree emerges from the syntactic structure. In other words, low-conventional metaphors not only highlighted the speaker's stronger emotional attitude, but also tried to stimulate the hearer's emotion and meet their emotional resonance. The conventionality degree of sadness metaphors can be seen as the grief evaluation measurement.

Furthermore, after comparing with high-conventional metaphors, low-conventional metaphors for negative emotions such as "sadness" can demonstrate the speaker’s grief for the loved ones who passed away more than high-conventional metaphors. In a word, the research reveals that the conventionality degree of metaphorical language is negatively correlated with the emotion intensity.

In addition, metaphorical expressions of high degree of conventionality can be categorized as emotion-denoted metaphors, i.e., they are intended to refer to a certain emotional category. On the other hand, metaphors of lower degree of conventionality, can be described as emotion-loaded metaphors, which aim to highlight the speaker's personal emotional attitudes and mental processes (see Jin 2019).

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Comparing constructions – the case of the Japanese construction *-te kuru* and English construction *come to V*

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Keywords: Japanese, *V-te kuru* construction, English, *come V-ing* construction, construction grammar

The presentation has two basic aims. The first one is to demonstrate the complexities involved in comparing constructions across languages and the importance of a balanced usage-based approach (Diessel, H., Dąbrowska, E., & Divjak, D. (2019)). The second aim is more practical and consists of the comparison of the two constructions: Japanese *-te kuru* and English *come to V* and their use.

The presentation starts with the comparison of the lexical verb *kuru* and its English counterpart *come*, which are the essential part of the compared constructions. It is demonstrated that the two verbs bear extremely comparable lexical meaning and are used in a parallel fashion. In the next step, I will consider the inner structure of the compared constructions concluding that it is also practically identical. The theoretical scrutiny of the compared constructions will conclude with an attempt to translate individual uses of the Japanese construction *-te kuru* as defined by Morita (1999) using English *come to V* constructions. We will see that the translations are grammatical and seemingly fine, all pointing to the fact that the two constructions are based on the theoretical assumptions very much comparable.

However, the following section will focus on the actual usage of the two constructions. There will be three corpora searches presented, the first two make use of corpora of written language (BCCWJ for Japanese, Brown family and BNC for English) and the third uses Japanese-English parallel corpus built by Czech National Corpus. The first one is an analysis of the verbs collocating with the given constructions, the second is the analysis of the frequency of the individual types of uses of the constructions and the third is a search of the V-te kuru construction and its counterparts in the parallel corpus. The corpora studies reveal that despite the seeming match of the two constructions their actual use differs tremendously.

The final part of the presentation will attempt to explain the motivation and causes of the detected disparities in the use of the two constructions. I will show that the construction is used primarily to express aspectual characteristics in Japanese and as a tool of information structure modulation in English. Moreover, I will link this difference to the differing tendencies in the semantic structure of verbs in the two languages, namely the tendency of Japanese verbs to express imperfective meaning (Kageyama, 1998) and the tendency to stress the manner of motion in English, being satellite framed language (Talmy, 2000).

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Speakers Move Unconsciously but Meaningfully: A Multimodal Constructional Analysis of Twin Forms in English

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Keywords: Multimodal constructions, (Metaphoric) gestures, Ideophones, Twin forms

Based on their different internal structures, twin forms in English (Marchand 1969) may be classified into three categories: (i) exact reduplicatives (e.g., *blahblah*), (ii) ablaut reduplicatives (e.g., *bibble-babble*), and (iii) rhyming reduplicatives (e.g., *claptrap*) (Mattiello 2013). Haiman (2018: 69) considers twin forms to be "outlier examples" of ideophones—marked words that depict sensory imagery (Dingemanse 2012). Haiman says *outlier* because unlike other types of ideophones, twin forms normally do not occur with accompanying gestures (cf. Voeltz and Kilian-Hatz 2001). However, careful observation of twin forms reveals that certain subtle but meaningful co-speech gestures occur with ablaut reduplicatives. It should be noted that even if the metaphoric gestures are tied to ablaut reduplicatives, they are not always explicitly expressed, as Haiman points out. This study thus addresses the following research questions: (i) what gestures accompany ablaut reduplicatives, (ii) what do they represent, and (iii) why do they not always explicitly appear?

To answer RQs (i) and (ii), this study claims that the hand and head gestures accompanying ablaut reduplicatives are metaphoric gestures (Cienki 2008), reflecting their linguistic forms, namely, vowel alternations (e.g., /ɪ/~/æ/ in *chitchat*). The TV News Archive (archive.org/details/tv) is used to observe expressive features accompanying these words and to compare them with the other reduplicative subtypes. From Matiello's (2013: 310–320) list of 338 twin forms, the ablaut reduplicatives (except proper nouns) are manually extracted, as listed in (1). Of the 87 words extracted, the 11 words printed in boldface convey the "idle talk" sense. Among the meanings of ablaut reduplicatives, the present study limits the scope of analysis to the words in this sense, because other senses like alternative movement (e.g., *flip-flop*), alternating sounds (e.g., *tick-tock*), and indecision (e.g., *shilly-shally*) may be related somewhat straightforwardly to the vowel alternations. Of the 11 boldfaced items in (1), the 5 underlined words attested in the TV News Archive are investigated.

(1) **bibble-babble**, bibbity-bob, bim-bom, **blish-blash**, brittle-brattle, cherry-churry, chip-chop, **chit-chat**, **chitter-chatter**, click-clack, clickety-clack, clinkety-clank, clip-clop, clippety-clop, clitter-clatter, creepy-clawly, crick-crack, criss-cross, diddle-daddle, dilly-dally, dimber-damber, dingle-dangle, dingly-dangly, drip-drop, drizzle-drazzle, feery-fary, fiddle-faddle, flicflac, **flimflam**, flip-flap, flip-flop, flippy-floppy, gew-gaw, **gibble-gabble**, hee-haw, hip-hop, ickle-ockle, jim-jams, kit-cat, knick-knack, liglag, mingle-mangle, mish-mash, nick-nack, nig-nog, pid-pad, pinpong, pinkle-pankle, pipple-papple, plit-plat, prid-prad, rickety-rackety, rick-rack, riff-raff, riprap, say-so, see-saw, shiffle-shuffle, shilly-shally, skimble-skamble, **slipslop**, smick-scmak, snip-snap, strim-stram, strium-strum, swing-swang, teeny-tiny, tick-tock, tick-tack-toe, ticky-tacky, tip-top, **tittle-tattle**, titty-totty, trick-track, trit-trot, **twiddle-twaddle**, twing(le)-twang(le), **twittle-twattle**, twit-twat, whim-wham, **whittie-whattie**, wibble-wobble, wigwag, wish-wash, wishy-washy, yolp-yalop, zig-zag
(based on Matiello 2013: 310–320)

The speakers of ablaut reduplicatives, when gestures are observed, move their hands or heads from one side to the other or to and fro, which symbolizes the vowel alternation. However, such patterns are not observed when the exact and rhyming reduplicative in similar meanings, *blahblah* and *claptrap*, are uttered. Thus, even if their meanings are superficially similar, they should be distinguished among the subtypes of twin forms. Therefore, as with the iconic and symbolic meanings of ablaut reduplicatives (Mattiello 2013: 151), bodily movements accompanying them metaphorically represent the vowel alternations.

Regarding RQ (iii), this study ascribes the lack of gestures to "deideophonization" (a trade-off between expressiveness and morphosyntactic integration of ideophones (Dingemanse 2017)), since most twin forms in English are integrated with the rest of the sentence structures as nouns and verbs. Even if gestural features do not explicitly appear, however, given the speakers' spontaneous use of them, they are considered to be part of the knowledge of ablative reduplicatives. This is similar to Kanetani's (2021) treatment of psychomimes in Japanese (a subclass of ideophones) as multimodal constructions with co-speech gestures constituting part of linguistic knowledge yet not always being expressed.

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When is a form good enough? How we avoid producing forms with unintended meanings

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Keywords: language production, language change, negative feedback

Interactive models of language production suggest that feedback from activated forms prior to articulation allows speakers to avoid speech errors (Dell 1985). Evidence for such prearticulatory editing comes from Motley et al. (1982), who found that speakers show sign of anxiety (the Galvanic Skin Response) when producing emotionally neutral stimuli like *hit shed* that are likely to result in a taboo utterance if mispronounced. This paper argues that prearticulatory feedback provides a mechanistic usage-based account for several forms of homonymy avoidance, as well as puzzling cases of degrammaticalization.

In connectionist models of production, the speaker's intended message activates semantic features, which activate associated forms, e.g., CAT+PLURAL activates *cat*, *cats* and *-s*. The form whose meaning perfectly matches the intended message, here *cats*, is advantaged because it is receiving more activation from semantics than other forms. However, when other forms are more frequent, e.g., *cat* vs. *cats*, they have higher resting activation levels and so could be erroneously produced, seeding paradigm leveling (Bybee & Brewer 1980; Harmon & Kapatsinski 2017).

The Negative Feedback Cycle (NFC) explains how paradigm leveling can sputter out. According to NFC, activated forms send inhibitory feedback back to semantic features they cue. Intended semantic features remain activated because they are receiving excitation from the message. In contrast, unintended semantic features (here, SINGULAR) are inhibited, and then send this inhibition back down to the associated forms (cat) in proportion to how strongly they cue these meanings. As a result, forms that activate unintended semantics (cat) are inhibited.

NFC inhibits taboo forms because they activate salient unintended meanings, accounting for pejoration, or 'bad meanings driving out good'. For example, once *intercourse* was intended to mean SEX, its production would be inhibited when SEX is not part of the message. Wordforms with unintended non-taboo meanings are also inhibited when the unintended meaning is more frequent than the intended meaning, accounting for some paradigm gaps. For example, the avoidance of *deržu* as the 1st person singular non-past of *derzit*^{j} 'dare' in Russian can be explained this way, because it would be homophonous with the 1st person singular non-past of the more frequent *deržat*^{j} 'hold'. In contrast, *vožu* can serve as 2nd person singular non-past of both *vodit*^{j} 'lead' and *vozit*^{j} 'drive' because both meanings are equally frequent.

NFC also provides a mechanistic account for the emergence of libfixation, a type of degrammaticalization (Norde & Sippach 2019), via blending. Degrammaticalization is usually thought operate via generalization over related words. However, libfixation is a counterexample. For example, *-holic* occurred in only one word, and yet was liberated from it, becoming a new affix. The NFC explains this development. A speaker who aims to produce the novel meaning ADDICTED.TO.WORK would activate the closest known form, *alcoholic*, with the meaning ADDICTED.TO.ALCOHOL. However, ALCOHOL is unintended, and so would be inhibited by NFC. This inhibition would then spread to the part of *alcoholic* that most strongly cues ALCOHOL, suppressing the triphone *alc-*, as a full 79% of words containing alc relate to ALCOHOL in COCA (Davies 2012), and retaining *-holic*.

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Exploiting a cognitive learning bias for vowel harmony to acquire a non-native vowel contrast

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Keywords: non-native speech perception, adverse listening conditions, substantive bias

Previous studies on vowel harmony have shown that it has several benefits in both perception and production. For instance, it reduces difficulties in speech planning (Berg 2003), helps identifying the following vowels after the first (Suomi 1983), and aids in word segmentation (Suomi et al. 1997). Thus, vowel harmony is a phonetically motivated process, while its logical counterpart, vowel disharmony, lacks a phonetic motivation and has not been attested in the world's languages.

In the recent years, a number of studies have examined the learnability of vowel harmony and disharmony in light of a substantive bias. This bias assumes that phonetically motivated patterns which facilitate speech production or perception are acquired more easily than patterns that do not (Wilson 2006). Several studies have revealed that vowel harmony is indeed learned more easily than vowel disharmony (e.g. Martin & White 2021; Martin & Peperkamp 2020).

However, these studies only examined the learnability of the pattern itself, not if a bias for vowel harmony could be exploited to acquire a new vowel contrast. This is the aim of the present study. We examine whether native English speakers can use vowel harmony to their advantage in order to establish new phoneme categories for the German vowels /y/ and /ø/. English speakers have been reported to confuse these vowels with the back rounded vowels /u/ and /o/, respectively (e.g. Strange et al. 2005; Levy & Strange 2008), so we use a palatal (dis)harmony to implicitly teach the difference between these vowels. Since adverse listening conditions can be especially detrimental in non-native speech perception (García Lecumberri et al. 2010), participants might particularly benefit from vowel harmony in noise. Thus, half of the participants were taught and tested in clear speech, and the other half in speech-shaped noise at SNR 8dB and 0dB.

There are two parts to our study: 1.) In an AX Discrimination Task, participants have to discriminate German CVC pseudowords differing in the vowel, and 2.) in an Artificial Language Learning Paradigm, participants are trained with a (dis)harmony pattern by listening to either plural forms containing /y/ or diminutive forms containing /ø/. Depending on the vowel properties of the stem, the suffixes will alternate (e.g. harmonic plurals: *veki-ky* and *mudo-ku*). After the training phase, all participants are tested on new plural *and* diminutive forms to examine if they are able to generalise the learned pattern to another vowel contrast. So in this test phase, participants hear a harmonic and a disharmonic version of a word (e.g. *roto-ky* versus *roto-ku*) and have to choose the correct version based on their training.

Data of the noise condition is still being collected. The results of the clear condition, however, suggest that using a bias for vowel harmony alone is not enough to boost participants' ability to discriminate non-native vowel contrasts. In the AX discrimination task, participants were unable to discriminate /y/ from /u/ and /ø/ from /o/, and in the following learning task, they still performed at chance level regardless of trained pattern or word form.

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Cognitive abilities underlying the early stages of L2 acquisition: An artificial language study

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Keywords: implicit statistical learning, explicit learning, individual differences, second language learning, grammatical processing

While late second language (L2) acquisition is largely explicit, there is some evidence that adults are able to acquire the vocabulary and the grammar of novel languages under incidental learning conditions (Rebuschat et al., 2021; Ruiz et al., 2018). However, it remains unclear which aspects of language can be/are learned implicitly and under what conditions. Here, we revisit the question of whether adults can learn grammar incidentally and investigate whether word order and morphology are susceptible to implicit learning to the same degree. Additionally, we ask what cognitive abilities support early L2 learning and whether their roles change as a function of time.

Forty-one English monolinguals, aged 18-35, were exposed to Kepidalo (**1**), an artificial language that had case marking and variable word order (SOV and OSV). The study included five online sessions. First, participants were explicitly trained on the nouns of the language. This was followed by a two-alternative forced-choice task (2AFCT) consisting of two blocks. In block 1 (270 trials), participants received vocabulary training, while being implicitly exposed to grammar. Two videos, each showing two aliens performing an action, were presented whilst a sentence was played (**Fig 1**). The videos differed in 1) one of the aliens, or 2) the color of one alien or, 3) the action performed. Participants had to select the video that matched the sentence and were given feedback on their responses. Block 2 served as a grammatical comprehension test. Here, the two videos differed in that the agent/patient roles were reversed. Participants completed 90 trials without any feedback. The 2AFCT was repeated in the first four sessions. In session 5, a grammaticality judgment task (GJT) including both word order and case marking violations assessed participants' grammatical knowledge. During the study, participants completed a series of cognitive abilities tasks testing explicit learning (EL), implicit statistical learning (ISL), sustained attention, grammatical sensitivity and speed of automatization.

We found that, although performance on vocabulary increased significantly across sessions (**Fig 2**), grammatical comprehension showed little improvement over time and improvement was limited to SOV sentences only (**Fig 3**). Moreover, in the GJT, participants performed better on grammatical than ungrammatical sentences and were better at detecting word order violations than case marking errors. Vocabulary and grammar learning as well as accuracy in the GJT were found to be modulated by EL. Sustained attention and accuracy in the initial noun training additionally predicted vocabulary learning, while, in the GJT, the positive EL effect appeared to be stronger for participants with higher sustained attention scores. Interestingly, for both grammar and vocabulary learning, the ISL effects were most pronounced early on, whereas the EL effects increased with time. However, the interaction between session and ISL was statistically significant only for vocabulary learning. Taken together, our results underscore the role of EL and ISL in early L2 acquisition. Furthermore, learners' difficulty with case marking confirms the presence of a threshold in incidental L2 acquisition which is tightly linked to the first language experience (Ellis, 2006; MacWhinney, 2005).

(1) Velg-a pog-a prad-o kov-o varek
velg-NOM green-NOM prad-ACC red-ACC jump-over
the green velg jumps over the red prad

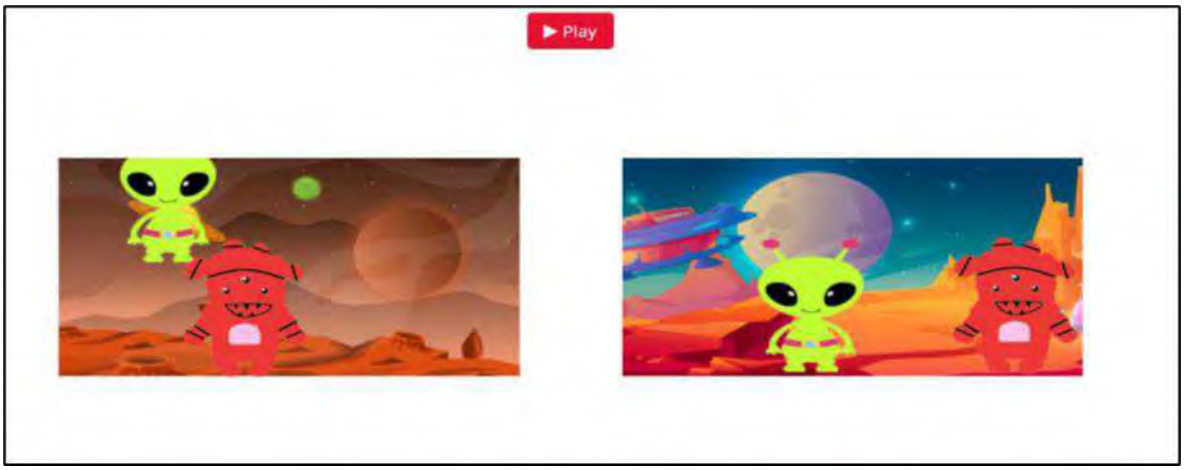

Fig 1. *Screenshot of a training trial in the vocabulary training block (Left scene: the (green) velg is jumping over the (red) prad, Right scene: the (green) velg is approaching the (red) prad.*

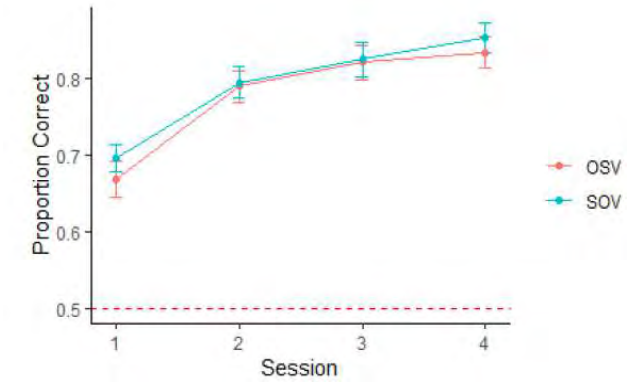

Fig 2. *Performance on the 'vocabulary training' blocks for each word order. The red dashed line indicates chance level.*

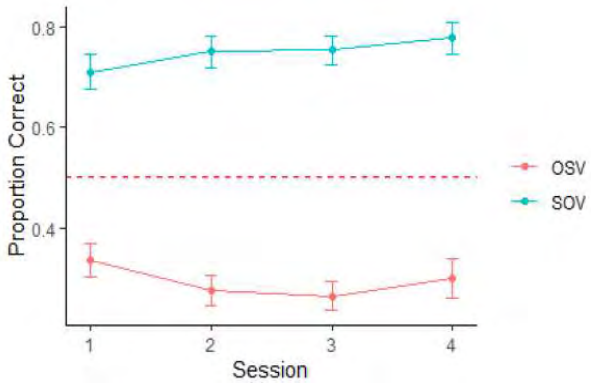

Fig 3. *Performance on the 'Grammatical comprehension test' blocks for each word order. The red dashed line indicates chance level.*

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Understanding perceptual change as a movement in literal and metaphorical sentences

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Keywords: Gesture, Literal sentence, Metaphorical sentence; Movement; Perceptual change

Results of the studies on the way language and body coordinate in communication (through language and gesture) have significant implications for language, education, and cognitive studies. However, there is a lack of convenient research in this area analyzing perceptual changes within individuals. To fill this gap, we investigated the embodied realizations of literal sentences representing perceptual changes and metaphorical sentences describing the phenomena in terms of perceptual changes. We classified sentences into categories that referred to a visual, auditory, haptic, gustatory, or olfactory change. Participants listened to four narratives. Each narrative contained five literal sentences that described a real perceptual change and five metaphorical sentences that described a phenomenon in terms of a perceptual change. We analyzed the recorded videos of the participants. The total number of literal sentences that described a real perceptual change was obtained for each modality (visual, auditory, haptic, gustatory, olfactory) separately. Also, the total number of gestures that were used with each category of these literal statements was obtained. Only gestures that described such perceptual changes as the movement of an object in the space were counted. The results revealed that gestures accompanied at least 53% of literal and 56% of metaphorical sentences. These results suggest that literal and metaphorical perceptual change sentences could be understood as movements at a conceptual level. The similarity between embodied realizations of literal and metaphorical sentences supports one of the main assumptions of the strong version of embodied cognition.

Are metaphorical classes essentially abstract?

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Keywords: abstract concepts, metaphorical classes, semantic associations

This article compares abstract concepts and metaphorical classes in order to emphasize the abstract nature of metaphorical classes. Glucksberg (2003) used the expression "abstract superordinate categories" to refer to metaphorical classes. Drawing on this proposal and Lakoff and Johnson's (1980) conceptual metaphor theory, this article suggests that metaphorical classes and abstract concepts share three essential features: (1) members of abstract concepts and metaphorical classes are highly diverse and heterogeneous; (2) both metaphorical classes and abstract concepts are highly reliant on situations and culture; (3) both metaphorical classes and abstract concepts are reliant on semantic associations and external concepts rather than intrinsic properties. Therefore, it may be claimed that metaphorical classes are a special group of abstract concepts with a special type of behavior.

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The effect of language on gender salience

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Keywords: Linguistic relativity, gender, memory

A large number of studies show that the way language encodes information affects speakers' cognitive processes, such as memory (e.g., Sakarias & Flecken, 2019; Tajima & Duffield, 2013). Languages also vary in the amount of information they require speakers to convey. For example, whenever English-speakers talk about count objects, they need to convey whether there is 1 vs >1 item (e.g., a cat vs. cats) while Japanese-speakers do not have to make such a distinction - they can use the word 'cat' when referring to one cat or multiple cats. This linguistic difference has been linked to English-speakers having a better recall of plurality information than Japanese-speakers from photos seen (Kirjavainen, Kite & Piasecki, 2020). Similarly, some languages such as German and Spanish need to include information about grammatical gender (e.g., masculine, feminine) when referring to objects/entities (including inanimate entities), but languages like English do not convey this information. Corresponding research suggests that grammatical gender markings affect perception of objects as more feminine vs. more masculine in speakers of languages that require grammatical gender (e.g., Boroditsky, Schmidt & Phillips, 2002).

Even though there is a large body of research on the effect of grammatical gender marking on cognition, the impact of linguistic gender identity markings on cognition is less studied. For example, Polish contains heavy gender marking and requires speakers to indicate the gender of the human referred to in surnames and professions (e.g., *gardener* vs*. 'gardeneress'*) and in most parts of speech, including pronouns (*she* vs. *he*). English contains a medium amount of gender marking as it requires speakers to use gendered third person singular pronouns (*she* vs. *he*, or sometimes *they*) when referring to humans. Finnish has no gender marking on nouns or pronouns. Thus, these three languages provide an ideal test case for investigation into the effect of language on gender cognition leading to the following prediction: if language impacts cognition, gender identity information should be most salient to Polish speakers and least salient to Finnish speakers.

We report a pre-registered online experiment that investigated memory accuracy differences for gender information in photos seen between monolingual Polish, English and Finnish 18-30-year-olds. The participants first saw 140 photos consisting of target photos, control photos and filler photos on a computer screen after which they were asked forced-choice questions about the photos – 50 questions on gender information (see example 1), 20 control human questions (2) and control non-human questions (3).

(1) *What did you see? A male sprinter vs. A female sprinter*
(2) *What did you see? A surfer lying down vs. a surfer standing*
(3) *What did you see? A round clock vs. a square clock*

Contrary to our hypotheses, there were no differences in gender memory accuracy for the English vs Finnish participants. Our data collection is still ongoing for Polish, but preliminary descriptive results indicate some differences between Polish and English/Finnish participants. The results are discussed in the context of the effect of language on the perception of people as simply 'people' or as males/females.

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Visual motivation for lexical blending

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Keywords: Lexical blending, Multimodality, Visual similarity, Typography, Gradual entrenchment

The word formation process of lexical blending has attracted attention from several perspectives in recent years. Lexical structure remains a central topic in analyses and hypotheses concerning blends (Balteiro & Bauer, 2019), but there are also other explanatory viewpoints. For instance, Kemmer (2003) suggests a schema-based approach to account for blend formation, Fandrych (2008) and Lalić-Krstin & Silaški (2018) highlight sociopragmatic concerns, and Kjellander (2022) argues that various types of ambiguity constitute an important motivation for blending.

One phenomenon that has emerged as a key factor in lexical blending is various manifestations of similarity. Semantic similarity, or association, between source words has been suggested in early 20th century accounts (e.g., Bergström, 1906), while structural similarity has been the main focus since the 1990s. For instance, Kelly (1998) explores phonetic similarities in breakpoints between source words, and Gries (2004, 2006) investigates the structural similarity between source words and between source words and blends. Arndt-Lappe and Plag (2013) argue that prosodic similarity between the second source word and the resulting blend is a central characteristic.

The current project takes a multimodal approach to similarity in blending. More precisely, it explores visual similarity in, for instance, typographic realizations. It is suggested that blends such as *Intellisense* (*intelligence* + *sense*) and *Dragula* (*Drag*[*/-and-drop*] + *Dracula*) draw on visual similarities as a means to create playful lexical constructs. For instance, a typographic similarity is identified between the graphemes *s* and *g* in the onset of the final syllable in *Intellisense* vs. *intelligence* (see Figure 1). This similarity is likely enhanced by the frequency-driven activation potential of *g* following the initial segment *intelli-* (cf. Gries, 2006 on the concept of selection point).

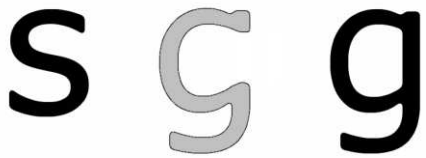

Fig. 1: Illustration of the typographic similarity between the graphemes s and g.

The analyses of the data are carried out from a Cognitive Grammar (CG) perspective (Langacker, 1987, 2001, 2008), and the data are taken from a database of 206 blends collected from the *News On the Web corpus* in Kjellander (2022). The methodology employed to collect these data has been shown to be statistically robust (Kjellander 2022:99), which is important given reported issues of empirical representativity in previous blend research (Wulff & Gries, 2019).

This project potentially contributes empirical support for seeing the distinction between non-linguistic and linguistic visual stimuli in terms of a cline. Such results align with a theory such as CG in which gradual entrenchment of patterns and multi-modal integrations of information would be expected. Moreover, the assumptions of the current project harmonize with Zhan et al. (preprint) in which it is pointed out that language acquisition involves the gradual development from visual stimuli to orthographic representations. Zhan et al. (preprint) also claim that the neurological patterns differ between speakers of English and Chinese in that users of Chinese typically employ a more extensive region in the ventral occipito-temporal cortex (VOTC) to process lexical constructs. Based on these observations, it appears cognitively realistic to assume that a continuum between visual and orthographic processing could serve as an available resource in the formation of blends.

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Experiments on the pages of Cognitive Linguistics from 2012 to 2022.

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Keywords: empirical linguistics, experimental linguistics, corpus linguistics, research design

The call for empiricism within cognitive linguistics was launched more than 25 years ago (e.g. Sandra & Rice 1995; Cuyckens et al. 1997). 10 years ago Laura Janda wrote that both the field of cognitive linguistics as a whole and the journal Cognitive Linguistics have taken a quantitative turn (Janda 2013). Janda (2013) surveyed all of the articles published in the journal from its first volume in 1990 through to the volume of 2012 and observed an exponential growth in studies that use statistical analysis of corpus data and experimental findings. In light of this quantitative turn, there are naturally those within the field who claim that there is too much "number-crunching" and too little introspective (qualitative) research being done (Langacker 2016), and those who claim that the field is still very much dependent on introspective data and not enough empirical research is being done (Dąbrowska 2016).

We want to follow up on the original survey conducted by Janda (2013) by looking at the articles published in the journal Cognitive Linguistics from 2012 to 2022. In our systematic review, we will focus mainly on experimental methods. One of the predictions we make is that the number of papers using experimental methods has risen over the years, including, inter alia, the rise in more complex research designs and more advanced statistical modelling techniques. This prediction is based on some of the methodological discussions that have taken place in the field of linguistics in general (e.g. Dąbrowska 2010, 2016; Edelman & Christiansen 2003; Gibson & Fedorenko 2010, 2013; Grieve 2021; Sprouse & Almeida 2013). If we exclude book reviews, overviews, commentaries, replies, squibs, CLiPs (surveys of recent publications), and introductions to special issues, we find a total of 240 articles published in the journal during the interval of 2012 to 2022. Some of the questions we will be discussing in our paper include the following: What is the relative proportion of using experiments in comparison with other methods, e.g. corpus analysis, for conducting cognitive linguistic research? Are some experimental designs used more often and hence deemed more suitable to answer the types of research questions cognitive linguists are interested in?

Our justification for the choice of the journal Cognitive Linguistics is similar to Janda (2013) in that it gives us the most consistent perspective available on the use of experiments in the field. We are aware that cognitive linguists who are using experimental work in their research may choose other venues for publishing their research. Our aim is to give an overview of the situation as it is portrayed on the pages of the "official" journal. In our future work, we want to extend the survey to include other prominent venues for cognitive linguists. We hope that by conducting this systematic review we can foster the discussion on the importance of methodological decisions and what these decisions entail in terms of interpreting the data and building cognitive linguistic theories.

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A Cognitive Discourse Analysis of task participant behaviour in elicitation situations

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Keywords: Spatial language, Frames of reference, Methodology, Cognitive Discourse Analysis

Spatial Frames of Reference (FoR) are conceptual representations of spatial relations between objects separated in space. FoRs have played a prominent role in cognitive linguistics and have proved a fruitful area for enquiries into the relationship between culture, language, and cognition (e.g. Bohnemeyer et al. 2015; Levinson 2003; Majid et al. 2004; Palmer et al. 2017). Data for these studies are often elicited using director-matcher games such as the various iterations of the "Man and Tree" (M&T) game (Levinson et al. 1992) and "Ball and Chair" game (Bohnemeyer 2008). Results from these tasks have contributed greatly to our understanding of spatial language and cognition, but there are also issues with this type of elicitation tool.

The influence of contextual factors on people's preferred FoR has been explored elsewhere across task-type (Bohnemeyer 2011), scale and audience design (Cialone 2019; Edmonds-Wathen 2022), arrangement of participants (Li et al. 2011) and socio-pragmatic factors such as alignment and priming (Dobnik, Kelleher & Howes 2020; Johannsen & De Ruiter 2013). However, the consequences of the social, cognitive, and communicative artefacts of the specific director-matcher-type games themselves have not been explicitly explored, and especially in terms of the effect they might produce on the results – and on which quantitative and large-scale comparisons are made.

Using a qualitative approach (Cognitive Discourse Analysis, Tenbrink 2015) we analyse participants' strategies in solving the artificial task at hand. We present data from a small sample of M&T games conducted in four Indigenous Australian languages: Wik Mungkan (Pama-Nyungan, Cape York); Kune (Gunwinyguan, Central Arnhem Land); Kukatja (Pama-Nyungan, Great Sandy Desert); and Murrinhpatha (Southern Daly, Kimberley). We focus on how participants establish interpersonal connections and anchor deictic expressions, without visual contact due to the task setup.

For example, we investigate how ambiguities in anchoring of observer-based landmarks, also referred to as 'speech act participant landmarks' (Polian & Bohnemeyer 2011; Palmer et al. 2021), are negotiated and resolved. Speakers have various options for using both director and matcher as anchor points for spatial reference and for organising deictic space. A simple example of this is in example (1) from Kukatja. In this example the matcher interprets the anchoring of the deictic system differently than the intended anchoring by the director. The matcher interprets the 2nd person form to mean closest to the matcher on the sagittal axis as shown on figure 1. However, the director intended to use the 2nd person form to divide the table horizontally. This pair of participants do not find a common ground for how this deictic system is anchored in this setup, and thus revert to another strategy for solving the game. An ambiguity in the spatial system such as this would normally be resolved by different types of joint attention behaviours but are constrained by the setup of the game.

Through analysis of strategy choice, gesture, and metacommunication about the task, we investigate what social, cognitive, and communicative factors influence the results of different pairs in different language communities, and what artefacts in the data result. These artefacts are important to consider for two reasons: [1] they might influence the macro-level results in language and/or culturally specific ways; and [2] the constraints placed on participants by the task, and the way participants respond to these constraints, are themselves a rich source of data on the individuals' spatial cognitive systems, in addition to the intended purpose of quantification of spatial frame choices. Through our analysis, we demonstrate the types of effects that interaction and artificial constraints can have on macro-scale comparisons. The large-scale patterns indicated by the tasks cannot be fully understood without consideration and analysis of cultural, linguistic, and even idiosyncratic factors influencing the data. As these studies are often conducted with small numbers of participants, the way a small number of games are run and "solved" by the participants can have massive effects on ensuing research generalisations, and it is therefore important to know what these effects are.

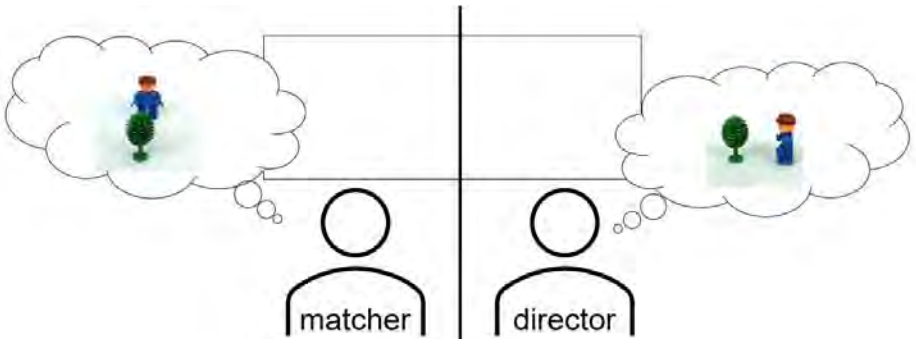

Fig. 1: different interpretations of the expression of an observer-anchored spatial frame (see example 1)

(1) *Warta tjeya* ***nyuntu-wana*** *and nyanginpa=lu tjii-lu puntu-lu warta-kutu.*
tree DEM **2SG-PERL** and see-PRS=3SG.L PROX-ERG man-ERG tree-ALL

'The tree there is near you and the man is looking towards the tree.'
(BAM: TEN2-2022_024-02: 1152.519)

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The fictive source domain: Extending metaphorical worlds via the *X as if Y* construction

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Keywords: Metaphor, Simile, Construction, Fictive, Embodiment

Fictive worlds in metaphorical communication are constructed by mapping the source domain onto the target domain. Although cognitive linguistic research typically assumes that metaphorical source domains are based on physical experience (Lakoff and Johnson 1999, Gibbs 2006), we argue that there are metaphorical expressions whose source domain lacks embodiment, which can be termed a *fictive source domain*.

Moreover, the X *as if* Y construction in English can create a fictive source domain of metaphorical understanding. This construction expresses a hypothetical comparison (Dixon 2009), and its metaphorical usage (*e.g.*, "He speaks as if he were a king") has been described as a "clausal simile" (Goatly 2011). This study aims to identify and describe metaphorical examples in which the subordinate clause Y expresses an event that cannot be experienced in the real world.

We randomly extracted 500 examples of the X *as if* Y construction from the *British National Corpus* and analyzed them in terms of two semantic properties of Y. The first is the literal/figurative distinction. In the literal use, such as "He closed his eyes as if he were tired," Y expresses an event that may be the case if additional information were to be supplied to indicate the same. In contrast, in the figurative use, such as "He crushed the man's hand as if it were an eggshell," Y represents an irreality that cannot possibly be true. The second property, the experiential/fictive distinction, divides the figurative use into two subtypes. In the experiential use, the metaphorical source domain is structured on an experiential basis, such as crushing an eggshell in the above example. In the fictive use, such as "The recoiling backwash of the seas was heaped with fluffy spume as if some giant hand had emptied a mammoth packet of detergent there," the source domain is fictive, as entities such as "some giant hand" and "a mammoth packet of detergent" cannot be conceptualized without fictive imagination.

We observed 251 (50.2 %), 197 (39.4%), and 52 (10.4%) examples of the literal, experiential, and fictive uses, respectively. Although relatively rare, dozens of instances of fictive source domains appeared in our data, indicating that the subordinate clause Y can accept a wide variety of fictive expressions to describe concepts represented by the main clause X.

Upon further examining the examples of fictive use, we found that fictive concepts are introduced as source domains by extending experiential concepts through three types of cognitive processes: imagination (*e.g.*, "as if *ghosts* hiding in the shadows"), metaphor (*e.g.*, "as if all the stones were *listening*"), and hyperbole (*e.g.*, "as if you are *the only girl in the world*"). Our findings suggest that a fictive source domain can be formed through a limited number of cognitive abilities and that fictive conceptualization has and is bound by experiential foundations despite the apparent freedom of creativity.

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基于意象图式理论分析“*Out of*+名词”结构式的原型义和隐喻扩展义

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提要：介词短语“*Out of*+名词”是英语日常表达中的常见结构式，到目前为止，在 COCA 语料库中其出现频率为 7361 条。本文基于认知语言学理论框架下的意象图式理论，以分析介词短语 *Out of* 的认知原型义及其语义扩展的认知过程。分析发现，*Out of* 的原型语义源于其在空间范畴的意象图式，这种原型意象图式可分为 静态图式和动态图式；此外，笔者拟构了 *Out of* 短语在动态图式下的射体回归运作机制，以期完善意象图式理论对 *Out of* 结构式的解释力。再者，研究发现，通过概念隐喻，*Out of* 的原型意象图式得以扩展，从而促成其从空间范畴向“感官范围”、“状态”、“排除和剥夺”、“来源和原因”、“选择”等抽象范畴的映射，进而产生多项隐喻义。

关键词：*Out of*、意象图式、概念隐喻、认知机制、空间范畴

1.引言

介词主要表达事物之间的关系，其一词多义现象一直是语义学研究的重点(赵艳芳，2001)。认知语言学，又称认知语义学，借鉴了哲学、人类学和认知心理学的研究，采用了一种观点，即一词多义是一种存在于语法范畴中的一种无处不在的属性。同时，认知语言学对一词多义现象的处理方式可分为三大类：将意义/感知视为范畴化；认识到语境对于意义/感知理解的重要性并强调语言知识和百科知识的不可分离；将原型理论纳入对一词多义现象的研究（Gries 2019：23-24）。自认知语言学诞生以来，认知语言学家已对英语介词尤其是方位介词开展了广泛研究：早在 1981 年，Brugman（1981）就对介词 Over 进行了意象图式分析；Goddard（2002）分析了英语介词 On 的原型意象图式，以及各种语义关系和延伸途径；Aajami（2019）针对二语习得者对介词 In 的一词多义习得情况开展实证研究；Javier A. Morras、文旭（2021）分析了介词 At 的部分空间概念结构构成时间概念的方式。随着认知语言学的逐渐发展，国内学者也逐步开展了对英语介词的研究：如聂亚宁（2001）对介词 Beyond 的意象图式和多义现象开展研究；陈晓湘、许银（2009）对 On、 Over、Above 的习得作用开展实证研究；马永田（2021）使用规则多义法对英语介词 On 多义项的认知机制及语义关联展开分析。然而，通过 CNKI 数据库检索，笔者发现：现有关于介词短语 Out of 的研究相对较少。其中，蔡晔（2014）仅通过查阅 Out of 在词典中的义项，实现 Out of 的多义网络的简单列举，并未对其从认知角度进行分析，研究结论略显片面；王新建（2008）对介词 短语 Out of 的隐喻和认知分析不够全面，仅包含其核心原型义项；丁冉（2010）较全面地研究了 Out of 的意象图式并详细分析了其在抽象范畴的语义延伸，但也忽略了边缘原型义项

及其隐喻义项，并且其对隐喻义的分类也不够全面。基于此，笔者拟提出一种新的运作机制，进一步完善 Out of 的原型意象图式，提高其对于原型义的解释能力，并在此基础上经过概念隐喻，对多项隐喻义进行全面细致、高度概括的认知分析。

2.意象图式理论

意象图式概念最早由 Lakoff 和 Johnson 在 1987 年提出。他们认为意象图式具有体验性、想象性、抽象性、心智性、动态性等特征，并指出它对于建构范畴、形成概念、分析隐喻、理解意义、进行推理等具有不可或缺的重要作用（王寅 2021：166）。Lakoff（1987：282-283）主要论述了七类意象图式并提出了形式空间化假设（spatialization of form hypothesis）。Langacker（2000：3）强调了意象图式是高度抽象的构型，是基于人类日常物体性经验值上的，如物体沿始源经空间途径移向目标、容器及其所容之物等。国内学者李福印（2007：80）认为意象图式产生于人类身体和外部客观世界的接触和互动之中，并使这些看似无关联的活动相互连贯，给抽象的活动赋予具体结构。这样，人们就可以用意象图式来理解这些活动，进行推理，并把看似无关的活动联系起来。虽然国内国外各个学者的出发点各有不同，但能确定的共同点是：意象图式具有体认性。

总之，人类在感知体验和互动的基础上把各种信息和经验组织成认知结构，逐步形成意象图式，储存于人们的记忆之中，新的经验可通过与其对比而被理解（王寅 2021：165）。因此，意象图式可以很好地作为认知语义学研究的一个切入点。本文就介词短语 Out of 的原型意象图式进行论述并对其空间原型义和隐喻扩展义分别展开认知分析。

3.Out of 的原型意象图式

参考其他方位介词，笔者认为，介词 Out of 的原型意象图式应属于“射体——路径——界标”图式。Lakoff（1987：419-440）认为：该图式主要由不同的射体（trajector，简写成 tr）、界标（landmark，简写成 lm）以及所经过的路径（path）三者组成，这三者通过显现出的各种相对位置、形状、尺寸、维度、作用等信息，表现射体与界标之间的某种动态或静态的不对称关系。tr 为这一不对称关系中的主体，其空间方位有待确认；lm 为参照物，为主体的方位确定提供参照；tr 所经过的路径称为 path。意象图式可表示 tr 与 lm 之间的动态关系，也可表示二者之间的静态关系。在静态意象图式中，tr 所经过的路径为零，起点和目标重合，tr 和 lm 处于相对静态关系。英语中的介词如 In 表示 tr 和 lm 的静态包含关系，Beyond 表示 tr 和 lm 的静态距离关系。而在动态意象图式中，tr 与 lm 之间的关系为动态关系。其含义可理解为：tr 以 lm 为参照物，在力的持续作用下，经过 path，产生了一定的位移关系。英语中的介词如 In 可以表示由从外至内的动态图式表示；Up 和由下至上的动态图

式相对应。基于此，本文研究对象介词短语 Out of 的原型空间义也可分别通过静态图式和动态图式来分别论述。

3.1 静态图式

Out of 的静态意象图式如图 1 所示

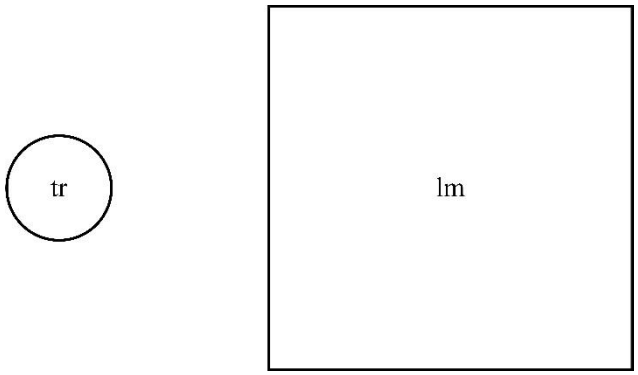

图 1. Out of 静态意象图式（引自丁冉 2010：115）

由图 1 可见：tr 位于 lm 的边界外，且两者之间的 path 为零，即 tr 并没有发生任何与 lm 相关的位移。但有一点需要注意：在静态图式中所指的静态并非指 tr 所处的状态是静止的，而是指 tr 是否在 lm 边界之外。换句话说，就算 tr 本身处于运动状态，但只要其处于 lm 边界之外，就仍具有静态图式的特征，意象图式属于静态还是动态并不会因为 tr 本身运动与否而改变。举例如下：

（1） There are two cars out of the door.

（2） The driver standing there is answering the phone call out of his car.

（3） There are two dogs out of the hospital.

在例（1）中，射体 two cars 始终停放在界标 door 之外，处于静止状态，所以满足静态图式的特征。在例（2）中，射体 driver 虽然具有运动（answering）的状态，但因为其所处的位置始终没有变化，位于界标 car 之外，所以仍满足静态图式的特征，不会受到 driver 的运动而改变。在例（3）中，射体 two dogs 的状态并不明确，可能是静止位于一个地方没有移动，也可能处于移动的状态。但无论如何，只要射体 two dogs 所处的位置或活动范围始终在界标 lm 之外，那么二者所属意象图式则始终满足静态图式的特征。

3.2 动态图式

Out of 的动态意象图式如图 2 所示

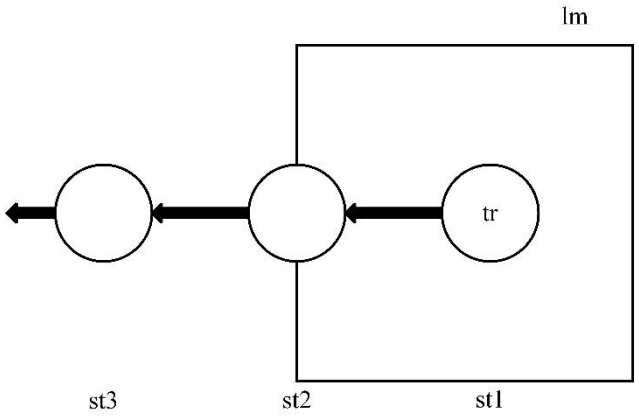

图 2. Out of 动态意象图式（引自丁冉 2010：116）

由图 2 可见：tr 最开始位于 lm 的边界内，st1、st2、st3 分别表示 tr 在力的作用下离开 lm 的动态过程，即 path 的三个阶段（stage，简写成 st）。在 st1，tr 完全处于 lm 内部；在 st2，tr 由于力的作用向 lm 的某一条边界移动，并与该边界接触；在 st3，tr 在力的持续作用下，进一步远离 lm，直到最后其完全脱离 lm。具体实例如下：

（4） The boy gets his gun out of the water.

在例（4）中，射体 gun 在 boy 所施加的外力作用下，逐渐脱离界标 water。 在第一阶段，射体 gun 完全位于界标 water 内部；在第二阶段，射体 gun 在 boy 所施加的外力作用下向界标 water 的某一边界移动，并与该边界接触；在第三阶段，射体 gun 在 boy 的持续施力下，进一步远离界标 water，直到最后脱离边界，完全处于界标 water 外部。

3.3 动态图式下的射体回归运作机制

虽然上述 Out of 的静态意象图式和动态意象图式作为原型意象图式，可以解释绝大部分介词短语 Out of 的原型空间义，但对于某些特例，现有的意向图式却无法进行解释，仍存在缺陷，需要得以完善。详见例（5）：

（5） She runs her business out of her home.（她在家做生意）

（6） She focuses her business out of her home.（她把业务集中在家以外的地方）

在一般情况下，对于例（5）的理解应参考 Out of 的静态意象图式，即射体 business 始终处于界标 home 的外部，所以句子应理解为：她在家以外的地方做生意。然而，该句在实际语用中的语义却是：她在家做生意。根据这一反常现象反推其意象图式，射体 business 应处于界标 home 内部，而这一推理所得出的意象图式与 Out of 的静态意象图式完全相悖。基于此，笔者尝试将此特例所属的特殊意象图式归类到动态图式的框架下。但这种归类又会产生一个新的问题，在传统的动态图式如例（6）所表现的意象图式中，射体 business 会在 she 施加的力的持续作用下最终位于界标 home 的外部，但在例（5）的意象图式中，射体 business 最后又回到了界标 home 的内部，是什么导致了这一反常图式的出现？为回答这一问题，笔者提出了动态图式下的射体回归运作机制（trajector regression operation mechanism），该机制具体工作过程如图 3 所示。

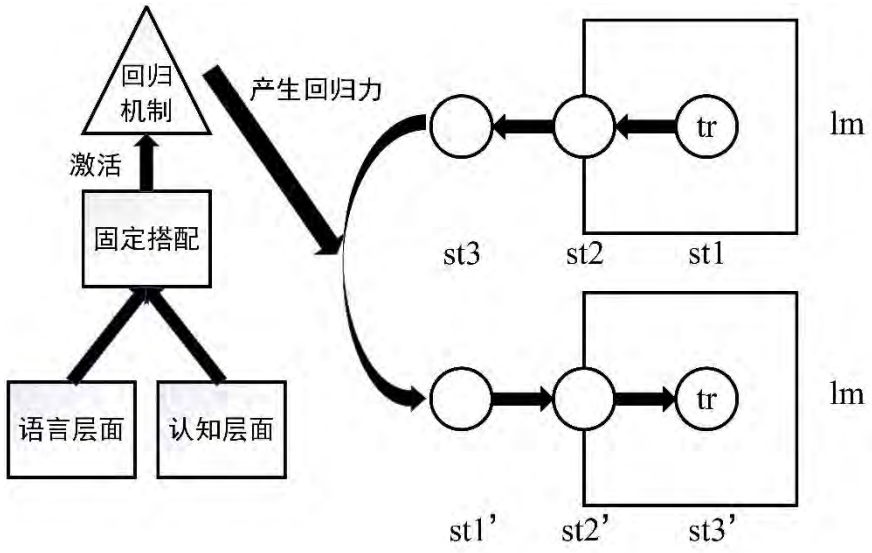

图 3 Out of 射体回归运作机制

由图 3 可见：在认知主体（通常为人）受到来自语言层面（如例（5）中的 run-business）和认知层面（各种认知因素如行为、心理等）的固定搭配，大脑内的回归机制（regression device）得以激活，进而在动态意象图式中产生一个回归力（regression force），使得本来处于传统动态图式中的 st3 阶段的 tr 在回归力的作用下以相反的方向，同样的路径，再次经过三个阶段（此处用 st'表示），最终回到 tr 在 lm 内的起始位置，完成一次从起始点-起始点的回归（regression）。

4.Out of 的原型义

基于上述原型意象图式，下面将通过具体实例详细分析介词短语 Out of 在空间范畴上的原型义。

4.1 Out of 表示“A 物体始终处在 B 物体空间范围外”

（7） There are two officers out of the jail.

（8） The swimmer who is running is out of the gym .

在例（7）中，射体 two officers 始终站在界标 jail 之外，处于静止状态，所以满足静态意象图式的属性。在例（8）中，射体 swimmer 虽然具有运动（running）的状态，但因为其所处的位置始终位于界标 gym 之外，所以仍然满足静态意象图式的特征，不会受到 swimmer 的运动而改变。但无论如何，只要射体所处位置或活动范围始终在界标之外，Out of 的静态图式属性便始终存在，表达“A 物体在 B 物体空间范围外”的空间原型义。

4.2 Out of 表示“A 物体在力的作用下从 B 物体空间内部移动到 B 物体空间外部”

（9） Mary takes her high heels out of the shoe cabinet.

根据 Out of 的动态图式，在例（9）中，射体 high heels 在 Mary 所施加的外力作用下，逐渐脱离界标 cabinet。在第一阶段，射体 high heels 完全处于界标 cabinet 内部；在第二阶段，射体 high heels 在 Mary 施加的外力作用下向界标 cabinet 的某一边界移动，并与该边界接触。在第三阶段，射体 high heels 在 Mary 的持续施力下，进一步远离界标 cabinet，直到最后脱离界标边界，完全处于界标 cabinet 外部，表达“A 物体在力的作用下从 B 物体空间内部移动到 B 物体空间外部”的空间原型义。

4.3 Out of 表示“A 物体在 B 物体空间内部”

（10） He establishes his company out of his home.（她在家里创办了公司）

根据 Out of 的动态图式下的射体回归运作机制，在例（10）中，射体 company 在 He 所施加的外力作用下，逐渐脱离界标 his home。在第一阶段，射体 company 完全处于界标 his home 内部；在第二阶段，射体 company 在 He 施加的外力作用下向界标 his home 的某一边界移动，并与该边界接触；在第三阶段，射体 company 在 He 的持续施力下，进一步远离界标

his home，直到最后其脱离界标 his home 的边界。同时，在语言和认知层面，认知主体受到固定搭配（establishes-company）刺激，大脑内的回归机制得以激活，进而在动态意象图式中产生一个回归力，该力使得射体 company 以相反的方向，同样的路径，经过三个阶段，最终位移到射体 company 在界标 his home 内的起始位置，完成回归，表示“A 物体在 B 物体空间内部”的空间原型义

5.Out of 的隐喻扩展义

当代认知科学普遍认为，隐喻在本质上不是一种修辞现象，而是一种认知活动，对人类认识世界有潜在深刻的影响，从而在人类的范畴化、概念结构、思维推理的形成过程中起着十分重要的作用（王寅 2021：387）。就像 Lakoff 和 Jhonson（1980：4）在 1980 年出版的 *Metaphors We Live By* 中开篇就强调了隐喻的认知作用：隐喻在日常生活中无所不在，不仅在语言中，而且在人类的思维和行动中都是这样。国内学者王寅（2021：387）指出：概念隐喻的主要功能是将推理类型从一个概念域映射到另一个概念域。通过概念隐喻，人类可以不断建立事体间的各种有机联系，为认识世界提供了一种基本方式，形成了组织经验结构和概念系统的基础。同时，根据 Lakoff 和 Johnson（1980）的观点，隐喻分为三大类：结构性隐喻（structural metaphors）、方位性隐喻（orientational metaphors）、本体性隐喻（ontological metaphors）。本文主要关注的是方位性隐喻，即运用诸如：上下、内外、前后、远近、深浅、中心——边缘等表达空间的概念来组织另一概念系统，实现从一个概念域到另一个概念域的映射（mapping），从而使得人类能够将表示空间概念的意象图式映射到其他抽象的概念上，并可以使用方位词来表达其他抽象概念（王寅 2021：390-391）。下面将笔者将详细分析 Out of 的隐喻扩展义。

5.1 Out of 表示“在某个感官范围外”

根据 Out of 的原型意象图式，无论是静态图式，还是动态图式，射体最终处于界标边界外，且界标的边界是一个范围；以认知的主体——人为出发点，这个范围指的是感官范围：包含属于认知主体的可视范围、听觉范围以及可触范围等。将这些感官范围视为界标，在界标边界外就等同于在感官范围外，从而产生如“看不到，听不到，够不到”等隐喻扩展义，具体实例如下：

（11） I watched the car until it was out of sight.

（12） Now your voice is out of hearing.

（13） This vase hanging on the wall is out of her reach.

在例（11）中，界标被视为 I 的可视范围，空间范畴被映射到人类感官范畴中的视觉次范畴。对该句所表达图式的具体认知过程为：射体 car 在力的持续作用下动态地从界标 I 的可视范围内最终移动到其边界外。根据例（12），界标被视为某个认知主体的听觉范围，空间范畴被映射到人类感官范畴中的听觉次范畴。但是有一点需要注意，具体该范围所属的认知主体是谁则需要根据语境来确定，因为语境对隐喻理解所起到的作用是不言而喻的，它与认知主体之间也存在一种互动关系，这与语言交际锥形图中的 S 所起的作用相似，可以理解为一个三维的概念（王寅 2021：458）。对该句所表达图式的具体认知过程为：射体 voice 在力的作用下，始终静止地处于界标某个认知主体的听觉范围之外。

在例（13）中，界标被视为 her 的可触范围，空间范畴被映射到人类感官范畴中的可触次范畴。对该句所表达图式的具体认知过程为：射体 vase 在力的作用下，始终静止地处于界标 her 的可触范围之外。

5.2 Out of 表示“脱离或处于某种状态”

Out of 的基本空间概念还可以被映射到状态域，产生“不再...，失去...，脱离...”，具有脱离或处于某种状态的含义，具体实例如下：

（14） The plane was spinning out of control.

（15） The patient is out of danger.

（16） The wheel had been twisted out of shape.

（17） He is out of temper.

在例（14）中，界标为状态域概念 control，射体 plane 自身在力的作用下，最终完全处于界标 control 之外，于是 Out of 的隐喻义“失去控制”便由此形成。在例（15）和例（16）中，界标分别为状态域概念 danger 和 shape，其隐喻识解机制与例（14）相同，射体 patient 和 wheel 在力的作用下最终完全位于界标 danger 和 shape 边界外，于是产生了“脱离危险”“身材走形”的扩展义。在例（17）中，界标为状态域 temper，射体 he 原本自身施加了一个力，使其从界标 temper 中完全脱离。然而，在这个过程中，认知主体大脑中的回归机制受到来自语言层面和认知层面的固定搭配激活，产生一个回归力，让原本作用于射体 he 的力的方向倒置，使其最终重新回归到界标 temper 内，完成回归，从而延申出“处于生气”的扩展义。

适用于状态隐喻的 Out of 的短语有很多；其中，表示“脱离某种状态”的短语有如 out of fashion、out of date、out work/employment、out of patience 等；但是，目前表示“处于某种状态”的短语却只有 out of temper，还需要大量的实例进行验证。

5.3 Out of 表示“对事体（物）的部分排除或完全剥夺”

笔者发现，在动态意象图式中，如果射体和界标本身存在所属关系，且该所属关系从某种程度上可被定性为二者之间路径的一部分，在射体沿路径远离界标直至最后完全脱离界标的过程中，这种关系也逐渐疏远或完全解除。具体而言，在第一阶段，射体在外力作用下远离界标，二者所属关系（路径）开始被“拉长”，但此时射体仍全部位于界标内，二者所属关系未发生实质性变化，但却存在一种分离，逐渐疏远的趋势。随后，在第二阶段，以射体接触界标边界为临界点，二者的所属关系开始被排除。最后，在第三阶段，当射体完全处于界标边界外时，二者的所属关系被完全剥夺。据此，笔者把射体在外力作用下离开界标直至最终完全处于界标外的过程看作二者所属关系被部分排除或完全剥夺的过程。需要注意的是，对于射体与界标间的所属关系究竟是被部分排除还是完全剥夺，依赖于具体的语境和认知主体基于经验的创造性的协同加工，而这一点正是认知语言学的体认性特点的精髓所在，具体实例如下：

（18） He advised me out of the ridiculous thought.

（19） They cheated him out of his savings.

（20） He appears out of breath.

在例（18）中，界标被隐喻为抽象概念 thoughts，射体 me 和 界标 thought 之间存在隐性所属关系，即这些 thought 是被 me 所持有。同时，这种关系可被定性为二者之间的路径，在外力作用下，射体 me 逐渐动态地与界标 thought 远离，最终二者之间的这种所属关系在外力作用下被部分排除或完全剥夺，即射体 me 已经“部分”或“完全”放弃了界标 thought。

在例（19）中，界标是被隐喻为实体概念 savings，射体 him 和 界标 savings 之间通过形容词性物主代词 his 建立显性所属关系，射体 him 受到外力作用逐渐远离界标 savings，最终射体 him 部分或完全地失去了界标 savings。当然，究竟是“他”是被骗掉了“部分积蓄”还是“全部积蓄”会根据具体的语境和认知主体的差异产生相应的理解。。

在例（20）中，射体 he 和界标 breath 之间存在隐性所属关系，因为人是一定需要呼吸的，且每个人的体内都存在一套呼吸系统以维持人的各项基本生命活动。同例（18）和例（19），射体 he 和界标 breath 之间的所属关系在外力作用下被部分排除或是完全剥夺，进而在理论上会产生“上气不接下气”，“无法（失去）呼吸”的隐喻义。然而，在实际使用中却只存在前者，目前笔者尚未发现 out of breath 能够表明无法呼吸的含义。这一语用现象的出现也应证了上文提到观点：对于存在所属关系的射体和界标之间这种关系的分离程度需要参考具体语境及语言以人作为认知主体具有体认性。在实际语用中，out of breath 只能表现出射体

和界标两者之间所属关系的部分排除，不能理解为完全失去呼吸。否则 She was slightly out of breath from running 这句话在语义上不可被接受。例（20）也同样如此，“他既然已经出现，怎么可能没有呼吸？

5.4 Out of 表示“来源”和“原因”

Out of 表示该两个隐喻义的隐喻基础来源于其原型意象图式中的动态图式所具有的基本属性，即强调射体是从某一个确定的界标非其他界标移动到界标边界外，该界标为射体的唯一来源，产生“由...而来”，“来自于...”等隐喻义。

（21） This table is be made out of wood.

在例（21）中，射体为原料范畴，即 table 的制作原料作为射体，并强调其原料是来源于界标 wood 而不是其他的原料（界标）。

（22） I lent money to him out of mercy

在例（22）中，射体为整个事件范畴，即 I lent money to him 这一事件作为射体。界标为 mercy，在识解过程中，认知焦点应放在整个事件范畴射体产生的原因来源于界标 mercy 而非其他同范畴界标如 greed，kindness 等。

可见，Out of 表示“来源”和“原因”的隐喻基础都基于相同的图式特征，因此，笔者将其归为一类。

5.5 Out of 表示“选择”

基于原型意意象图式中的动态图式和大量 Out of 的语用实例，笔者发现：当满足这三个条件时：即射体和界标都属同一概念；界标在语法范畴层面表现为可数名词复数；且在语法范畴上，射体数量 x 和界标数量 n 满足某一确定的不等式关系，射体远离界标运动直至最后完全处于界标外的过程，可被看作把界标分成 n（n≥2）个部分，并在力的作用下挑选其中 x（1≤x≤n-1）部分作为射体，使其最终处于界标之外。这解释了为什么存在 x out of n（从 n 中选出 x 个， n 中的 x 个）的语用实例，表示了“选择”的意义。具体例子如下：

（23） Nine out of ten students like reading.

（24） Nine out of students like reading.

（25） Nine teachers out of ten students like reading.*

（26） Nine out of bread have been sold out.*

（27） Nine out of Nine students like reading.*

（此处用*表示该句语义不可被接受）

在例（23）中，界标为实体范畴概念 students，射体 nine 和界标 students 都属同一概念 student,射体在远离界标运动直至最后完全处于界标外的过程，可看作把界标 students 分成十个部分，在力的作用下挑选其中的九个部分作为射体，并使其最终处于界标之外。

与例（23）不同，在例（24）中，界标 students 被分成若干部分，在这里我们用 n_1（$n_1 \geq 10$）来代替，此时界标被分成若干个部分，在力的作用下，其中九个部分作为射体，最终被挑选出来，处于界标之外。

然而，在实际的语用中，却从来没有出现过如例 （25），例（ 26） 和例（ 27）的句子，因为这三个例子分别未满足界标可分的三个条件：射体和界标都属同一概念，界标在语法范畴层面为可数名词复数，射体数量 x 和界标数量 n 满足某一确定的不等式关系。

6.结论

本文运用认知语言学框架下的意象图式理论，对 Out of 意向图式的原型义和隐喻扩展意义开展认知分析，分析结果表明， Out of 的扩展隐喻义都是从其原型意象图式扩展而来。同时，为完善 Out of 原型意向图式，提高对该结构式的解释力，笔者创造性拟构了射体回归运作机制。此外，本文分析了介词短语 Out of 在空间范畴中的原型义和该意象图式在其他抽象范畴中的隐喻扩展义，细致描述并解释了背后的认知机制和规律，从而丰富了现有对介词方位隐喻的研究；所提出的射体回归运作机制更是为意象图式理论研究提供一个全新的视角。

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An Analysis of the Prototype Meaning and Metaphorical Extension Meaning of the *"Out of*+ Noun*"* Structure Based on the Image Schema Theory

Abstract: The prepositional phrase "*Out of* + Noun" is a common structure in everyday English expressions, with a frequency of 7361 in the COCA corpus so far. Based on the image schema theory, this study analyzes the cognitive prototypical meaning and its semantic extension of the prepositional phrase *Out of*. The study shows that the prototype meaning of *Out of* is derived from its image schema in the spatial category, which can be divided into static schema and dynamic schema. In addition, this research constructs the operation mechanism of the trajector regression of *Out of* under the dynamic schema with the aim of improving the explanatory power of the image schema theory on *Out of* structure. Furthermore, through conceptual metaphor, this paper claims that the prototypical image schema of *Out of* is expanded from spatial categories to abstract categories such as "sensory scope", "state", "exclusion and deprivation", "source and cause" and "choice", and then produces multiple metaphorical meanings.

Key words: out of; image schema; conceptual metaphor; cognitive mechanism; spatial category

Expectation and memory of event results

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Keywords: event memory, event result, fulfilment type, verb, expectation

Whether and how language influences memory is an important and controversial topic in cognition. While a few studies demonstrate language's impact on event memory (e.g., Filipovic, 2011; Skordos et al., 2020), many attest no such effect (e.g., Papafragou et al., 2002; Santin et al., 2020, 2021). We approach this issue from the perspective of event verbs' **fulfilment types**, an under-explored property formulated in Talmy's (2000) event integration theory for Realisation macro-events. This property concerns how certain intended results denoted in verbs are realised (hereafter 'result certainty'). To illustrate, **intrinsic-fulfilment verbs** such as *kick* do not specify intention without context and thus do not indicate what result is achieved; **moot-fulfilment verbs** such as *hunt* outline the intention but leave moot whether that intended result is realised; **implied-fulfilment verbs** such as *wash* denote specific intention and imply its realisation; **attained-fulfilment verbs** such as *kill* entail the realisation of specific intention. In this study, we a) investigated how result certainty in verbs creates expectations for event results, b) explored how such expectations might influence memory of event results, and c) attempted to extend Talmyan event research beyond motion to less studied event domains.

We conducted two experiments with monolingual English speakers. In Experiment 1, 16 raters read event descriptions containing verbs differing in result certainty, each event with a successful and an unsuccessful outcome, and rated how likely each outcome was. High ratings for successful outcomes indicated high result certainty in verbs and a success bias for the relevant events. In Experiment 2, a further 102 participants read the same event descriptions, with either a successful or an unsuccessful outcome, and estimated how much effort was involved in the action to ensure attention during event encoding. One day later, the same participants read short event summaries containing the original verbs and recalled whether the relevant intended results were realised.

Experiment 1 demonstrated the psychological reality that verbs come with different degrees of result certainty and create different expectations for event results. Events described with intrinsic-, implied-, and attained-fulfilment verbs elicited increasing likelihood estimations for successful outcomes, creating a success bias for these events; in contrast, events described with moot-fulfilment verbs showed no success bias (successful outcomes: M=53.39%; unsuccessful outcomes: M=51.91%). In Experiment 2, logistic regression with post-hoc estimated marginal means analysis revealed the following findings. First, events with successful outcomes yielded better memory performance than unsuccessful outcomes did for events described with attained-fulfilment verbs ($Z=2.90$, $p<.005$). Second, when events had unsuccessful outcomes, poorer memory occurred for events described with attained-fulfilment verbs ($Z=-3.75$, $p<.005$) and intrinsic-fulfilment verbs ($Z=-3.58$, $p<.005$), compared to events described with moot-fulfilment verbs.

These results suggest that result certainty in verbs creates expectations for event results, which in turn impacts memory of event results. What distinguishes this project from previous event language and memory research is that we examined how language involved at the time of recall influences memory, considering that language involved at the time of recall impacts memory more strongly than language involved at event encoding (Loftus et al., 1978). Previous research mostly focused on language involved at event encoding, which is possibly why language influence on memory was seldom attested. That event memory can be influenced by verb choice has real-life implications for arenas such as police investigations and courtroom testimonies.

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How internet memes evolve and become as abstract as | || || |_

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Keywords: Internet memes, multimodality, language change, grammaticalization

The study of the evolution and emergence of grammar and structure in language has greatly benefited from grammaticalization theory, which studies the development from lexical to grammatical forms and from grammatical to even more grammatical forms in the languages of the world (Kuteva et al., 2019, 3). However, since precise data on language transmission is typically not available for a given language, the relationship between transmission patterns and semantic change is not well understood (Petré & Van de Velde, 2018).

In this paper, we argue that the study of image macros or internet memes can contribute to our understanding of language evolution. Image macros, here "memes", are multimodal constructions with text superimposed on an image (Dancygier & Vandelanotte, 2017; Zenner & Geeraerts, 2018). We argue that internet memes follow an evolution pattern akin to grammaticalization, changing from concrete to abstract meanings and developing their own multimodal "grammatical" constructions. We also hypothesize that in periods of high transmission (virality), the rate of semantic change increases in the direction of higher abstraction.

We analyze ten different viral memes (ca. 2000 instances), each consisting of an image with text. We collect information on the date, format, and semantic change over time of a sample of meme instances shared on Know Your Meme (knowyourmeme.com). Our classification of semantic change describes the incremental stages of change of text and picture in memes (see Figure 1). These stages are parallel to the stages of grammaticalization, such as use in new contexts (innovation) and semantic bleaching and erosion (change of text and picture). We also show that these stages follow the same temporal ordering across memes (cf. Figure 1), resembling the unidirectionality of grammaticalization.

In Figure 1, the first image on the left is the original source for the "Boardroom suggestion" meme. While the original webcomic characters represent the Nintendo boardroom concretely (Know Your Meme, 2023a), the second image sees the rise in abstraction as the characters become placeholders for any boardroom character, the staff of History channel in this case. Comic strips are especially suitable for the reinterpretation of a character's identity because their stereotypical characters are seen as representing a type that can apply to many individuals. The second image achieves this reinterpretation by replacing all of the original text; the last image is even further eroded, as the pictures themselves are replaced. It is also more semantically bleached, since it departs from the topic of the original instance.

Additionally, we compare the memes from our sample, consisting of text and image, with memes whose constructions use only visual language, e.g. shape and position of different elements. In Figure 2, we exemplify this with the "Loss" meme, which evolved to highly abstract visual representations, such as "| || || |_".

Finally, based on our data we can also show that higher transmission of memes leads statistically to a higher rate of semantic change in the direction of higher abstraction and that the rate of growth in abstraction of a meme correlates proportionally to its virality.

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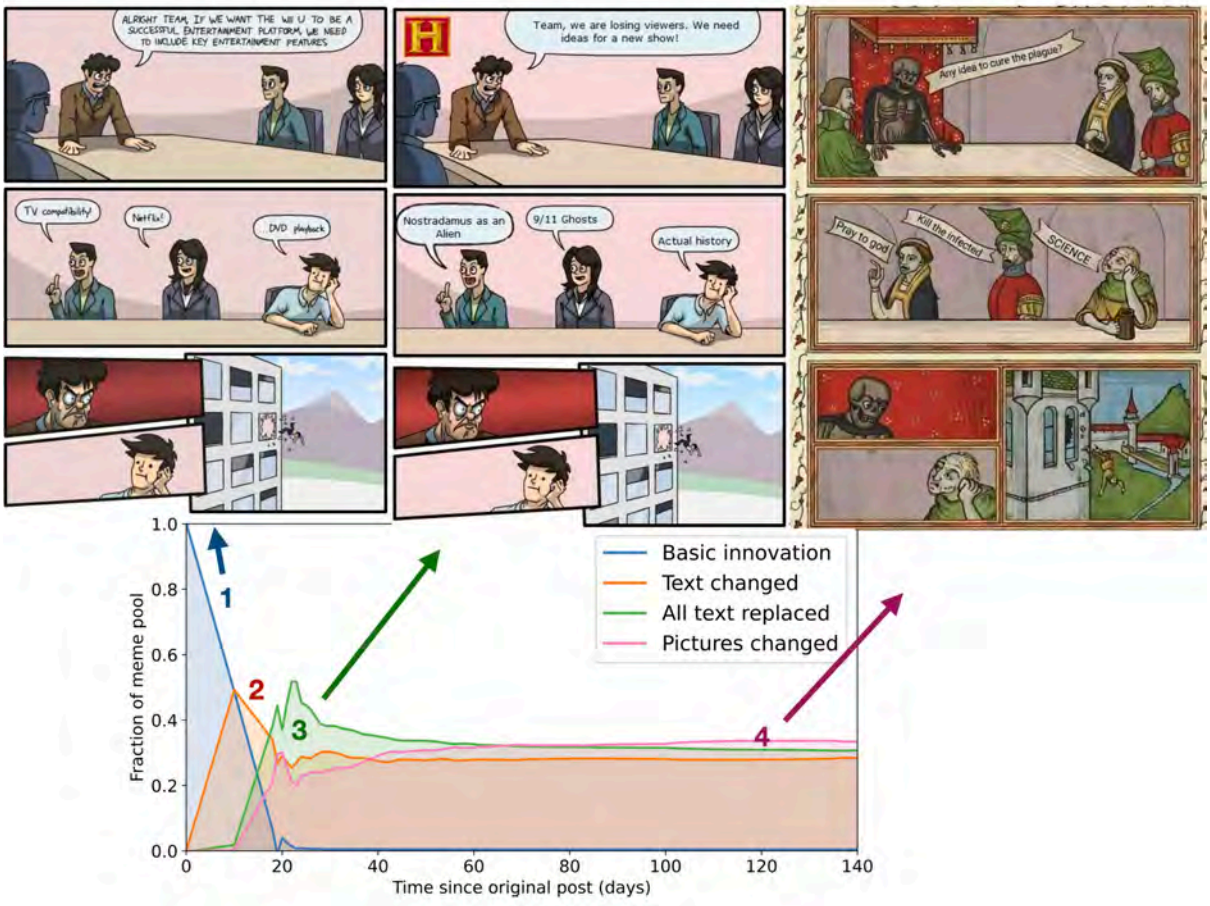

Fig. 1: Fraction of memes (N=277) in each stage of evolution over time of the "Boardroom suggestion" meme with examples, memes from Know Your Meme (2023a)

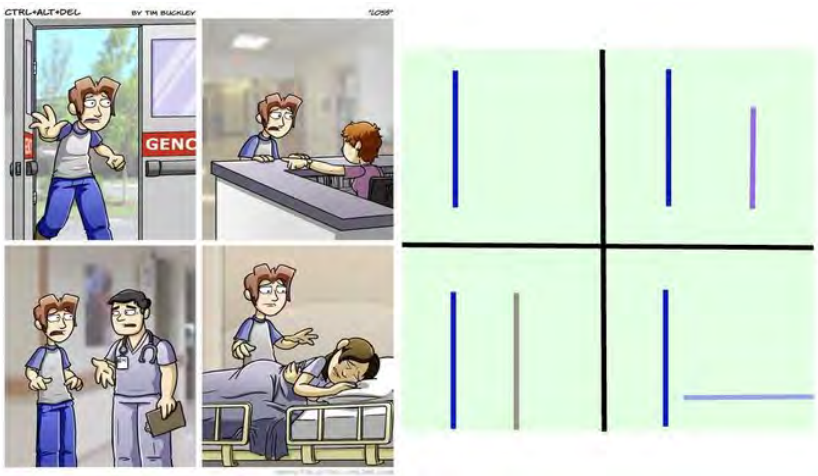

Fig. 2: The original comic "Loss" (left) and its recent abstract versions as "Loss" meme (right), from Know Your Meme (2023b). The meme can also be written as "| || || |_".

Language use as evidence for distinct cross-linguistic conceptual structure. A corpus study of social emotions in French and English.

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Keywords: Behavioral Profile Approach, Conceptualization, Social Emotions

The aim of this study is to quantifiably identify indices of conceptual structure of SHAME in English and French. Employing the Behavioral Profile Approach (Geeraerts et al. 1994, Divjak & Gries 2006) combined with theoretical principles established by Lakoff (1987) and Wierzbicka (1997), conceptual structure is operationalised through the systematic analysis of language usage retrieved with the use of key words. Previous, cross-linguistic research and social psychology has revealed differences in the conceptualization of SHAME between different speech communities (Krawczak 2014, 2018). These results have also shown that SHAME may involve differentiating factors such as negative self-evaluation, the person responsible for the actions, intensity, and duration (Tangney et al. 1996 inter alios). This study firstly seeks to confirm these previous results but importantly focus upon the possible effects that grammatical semantics may have on such conceptual structure. Such effects have been hypothesised (Wierzbicka 1985, Talmy 2000, Glynn 2007) but have yet to be empirically confirmed. Understanding the role of this dimension of language and how it may impact upon conceptual structure of emotions is essential.

The sample is based on key words (Wierzbicka 1997). In English, the four terms are ashamed, embarrassed, guilty, and feel bad where in French they are *honteux* 'ashamed', *coupable* 'guilty', *honte* 'shame', and culpabilité 'guilt'. The choice of the terms was based upon their relative frequency, following the assumption that more frequent items are more representative of a given culture (Krawczak 2018). The data are taken from the LiveJournal Corpus (Speelman & Glynn, 2005) and the Canalblog Corpus (Yang 2019). As the first step of the Behavioral Profile Approach, the data are submitted to manual annotation by the author and a second annotator, with usage features, such as Cause of emotion, Responsible for the cause, Audience, Gravity of cause, Intensity of emotion, Intention, and Construction. The factors of Gravity of cause and Intensity are subjectively measured with the use of a Likert scale. For both types of factors, Kappa coefficient is used to assure inter-coder agreement.

The manual analysis of the uses produces a large set of metadata - the behavioral profile. At this stage, multivariate quantitative methods, such as multiple correspondence analysis, will be applied to the metadata, in order to identify multidimensional association between explanatory variables. Binary and Multinomial regression analysis will then be used to confirm the descriptive accuracy of the results and compare them with the results of previous studies. With regard to any possible effects of grammatical semantics, at first exploratory analysis will seek to identify any complex correlations (multiple correspondence analysis). Assuming such effects are identified, an attempt will be made to add them to the regression modelling to ascertain if it is possible to produce more predictively accurate models. We expect the quantitative results will confirm the underlying structural dimensions of the emotion as well as reveal various characteristics unique to English and French. Furthermore, we hope to demonstrate that constructional effects need to be integrated into the corpus data of keyword-based research on conceptual structure.

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Experiencers of the construction of “It feels ADJ to VERB” and (inter)subjectivity in the discourse

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Keywords: viewpoints, experiencer, (inter)subjectivity, discourse, context

Let us think about who the experiencer is in the following sentence.

(a) It feels good to be here.

It probably didn't take too much time to come up with the idea that it is the speaker, thanks to the deictic word "here". Now, let us think about the following sentence.

(b) It feels good to cry.

For this sentence, some people may still say the experiencer is the speaker, but others may say it is generic or otherwise. Since the experiencer is not explicit, it is open to discussion.

This study attempts to show how the construction of “It feels ADJ to VERB” is embedded in context and that different kinds of viewpoints and (inter)subjectivity are found in discourse by presenting several case studies.

First, I will display some major categories of the experiencers of the construction found in The Corpus of Contemporary American English (COCA). The data genres include spoken, fiction, magazine, TV/movie subtitles, blogs, and other web pages. Second, I will demonstrate some notable patterns of discourse and expand on them to distinguish different types of viewpoints and (inter)subjectivity. Then, I will explore the theoretical application and extension of the findings.

Experiencers can be categorized as specific, generic, and imagined. Specific experiencers include 1st, 2nd, and 3rd person (singular and plural). The distinction between generic and imagined experiencers is that while generic experiencers are not a specified person, imagined experiencers tend to be the addressee in the speaker/writer’s (S/W) scenario.

The notable discourse patterns are where the S/W states a feeling from the addressee's point of view whether based on real world context or in a S/W’s scenario, and where the S/W gives the addressee a third person’s viewpoint.

Different kinds of intersubjectivity can be found where the S/W shares their own stance on external situations, where the S/W gives a certain viewpoint to the addressee, and where the S/W assesses the addressee’s feeling, in order to achieve overall discourse goals.

To conclude, and for the further discussion, I will explore the theoretical application of the findings above and propose that the ongoingness of a scene is a major key for the clarity of viewpoints and viewing arrangement.

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On the multimodality of English [ADV *and* ADV] construction: A collostructional approach

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Keywords: multimodal constructions, collostructional analysis, gesture lexicon

In the study of multimodal constructions, it remains an important methodological issue that the entrenchment of multimodal constructions depends not only on the frequency with which certain gestures co-occur with particular verbal constructions, but also on how salient and typical the gestures are for the constructions (Hoffmann 2017). As several researchers have proposed applying collostructional analysis to address this issue (e.g., Hoffmann 2017; Schoonjans 2017; Zima 2017), this study employs such analysis to the actual investigation of multimodal constructions. What makes this analysis possible is the notion of the *gesture lexicon* (Kipp 2004), where its lexical entries, or *gesture lemmas* are "taken as prototypes of recurring gesture patterns where certain formational features remain constant over instances" (Kipp et al. 2007: 4). With reference to previous studies on *recurrent gestures* (Ladewig 2014), a total of 62 gesture lemmas were identified in this study, and some of them showed significantly high collostruction strength to the constructions investigated. Thus, the results provide compelling evidence that multimodal constructions are entrenched in our mind.

Collected from the TED Corpus Search Engine, an online corpus system that searches transcripts of over 4,800 TED Talks (Hasebe 2015), the data used in this study form a multimodal corpus with 407 speakers performing 1,092 gestures in total. Following Kipp's NOVACO scheme (Kipp 2004), all gestures were coded in ELAN and assigned gesture lemmas. The construction under investigation is English [ADV *and* ADV] construction, instances of which compose the reduplicative adverbial constructions (*over and over* [N = 160], *again and again* [N = 107], and *on and on* [N = 48]) and the oppositive adverbial constructions (*back and forth* [N = 110], *up and down* [N = 92], and *in and out* [N = 59]). They form a constructional network (Figure 1) through formal or semantic analogy.

Regarding the reduplicative adverbial constructions, each construction exhibits a similar tendency that the gesture lemma PROGRESS (Figure 2) has the highest collostruction strength. Of even greater interest is the fact that the reduplicative adverbial constructions as a whole show much higher collostuctional strength to the gesture lemma (Table 1), indicating that language users have lexically schematic multimodal constructions. Conversely, the oppositive adverbial constructions display different dispositions, each of which favors particular gesture lemmas. Moreover, Table 2 demonstrates that the oppositive adverbial constructions holistically exhibit high collostruction strength to the repetitive gestures that involve opposite movements regardless of the directions (Figures 3–6). This finding raises the possibility of multimodal constructions that are both lexically and kinesically schematic in nature.

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Tables & Figures

Table 1. Gesture lemmas attracted to RACs

Cogestures (N = 294)	Expected Frequency	Frequency in the corpus	P Fisher exact (Intermodality Strength)
ATTRACTED			
I.Progress (107)	39.58	147	1.86E-36
I.Wiping-Window (15)	5.65	21	2.22E-05
Beat (81)	60.04	223	5.14E-04
I.Clockwork (4)	1.35	5	2.04E-02

Table 2. Gesture lemmas attracted to OACs

Cogestures (N = 238)	Expected Frequency	Frequency in the corpus	P Fisher exact (Intermodality Strength)
ATTRACTED			
I.To-Fro (45)	12.42	57	3.18E-21
I.Up-Down (35)	9.37	43	2.40E-17
I.Small-To-Fro, 2H (38)	12.21	56	3.17E-14
I.Small-Up-Down (17)	4.14	19	3.96E-10
I.Small-To-Fro, 1H (16)	4.79	22	3.53E-07
I.In-Out (8)	2.4	11	4.09E-04

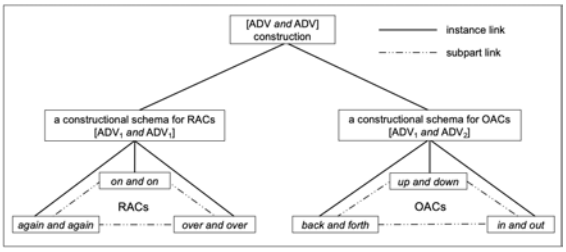


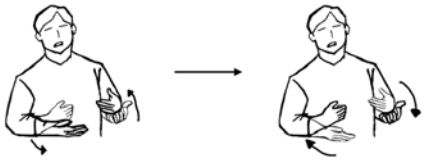
Figure 1. The constructional network

Description	Hand moves in circles where in the upper arc the hand moves away from the body.
Features	Move: circular movement/parallel to the sagittal plane
Frequency	OVER: 55 (37.2%), AGAIN: 37 (34.9%), ON: 15 (37.5%) BF: 4 (3.8%), UD: 1 (1.2%), IO: 1 (2.0%) other constructions: 34 (6.1%)

Figure 2. PROGRESS

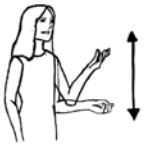
Description	Hand moves to one side, and then the other (and repeats the movement several times). If this gesture occurs with both hands, they move in the same direction.
Features	HS: open/forefinger, Loc: →side → other side Move: movement from the elbow
Frequency	OVER: 1 (0.7%) BF: 29 (27.4%), UD: 5 (6.0%), IO: 11 (22.4%) other constructions: 11 (2.0%)

Figure 3. TO-FRO



Description	Both hands alternate quickly in a back and forth movement.
Features	2H, HS: open/forefinger, Loc: in front of torso Move: movement from the wrist
Frequency	OVER: 5 (3.3%), AGAIN: 1 (0.9%), ON: 1 (2.5%) BF: 26 (24.5%), UD: 2 (2.4%), IO: 10 (20.8%) other constructions: 11 (2.0%)

Figure 4. SMALL-TO-FRO, 2H



Description	Hand moves in an up-down movement. If this gesture occurs with both hands, they move in the same direction.
Features	Orient: PD/PU, Move: straight up-down motion (from the elbow)
Frequency	OVER: 2 (1.4%), AGAIN: 1 (0.9%) BF: 2 (1.9%), UD: 31 (37.3%), IO: 2 (4.1%) other constructions: 5 (0.9%)

Figure 5. UP-DOWN

Description	Hand moves away from the body and then back toward the body, or in the opposite direction.
Features	HS: open/forefinger, Move: AB → TB/TB → AB
Frequency	AGAIN: 2 (1.9%) BF: 5 (4.7%), UD: 1 (1.2%), IO: 2 (4.1%) other constructions: 1 (0.2%)

Figure 6. IN-OUT

Influence of situational context on word learning in 14- and 19-month-old children

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Keywords: language acquisition, infants, fast-mapping, eye-tracking, visual context

During early language acquisition, children's word usage is highly bound to situational and thus visual contexts (Bloom, 2002): time of day, routine… Moreover, Axelsson & Horst (2014) showed that 3-year-olds learn a novel word for an object more easily when it is presented with the same other objects than when it is presented with multiple other objects. 2 ½- to 3-year-olds also perform better in a test of generalization to new exemplars when background color doesn't change during learning compared to a change (Vlach & Sandhofer, 2011). This suggests that a certain invariance of visual context helps young children when learning new words. However, to our knowledge, this has never been tested experimentally during the very beginnings of word learning from the first birthday.

Our study therefore compares word learning in French-learning 14- and 19-month-olds using visually distinct (Condition 1: with a change in object orientation and background) and identical (Condition 2) object pictures in a fast-mapping eye-tracking paradigm. We present infants with four blocks of two novel object-pseudoword associations in each condition (see examples in Table 1). During the learning phase, each object is presented three times with its label. During the following test phase, the two novel objects appear side-by-side with one pseudo-word in two trials. We compare pre- and post-naming looking times towards the target object in the test phase after 3 and 6 expositions (in order to assess possible subtle learning effects). Figure 1 recapitulates this procedure schematically.

In our analysis, we calculate the mean proportion of target looking (PTL) for each trial in pre- and post-naming phases and average it by subject. If children have learned to associate meaning to form in the learning phase, we expect a naming-effect to manifest as an increase in PTL in the post-naming phase. If infants indeed find it difficult to generalize across contexts, they should perform better in Condition 2. Furthermore, in Condition 1, older children might outperform their younger peers who have not yet gone through vocabulary spurt. Preliminary analysis of 35 subjects (22 14 m.o.; 13 19 m.o.) suggests that 14-month-olds and 19-month-olds might actually benefit from context change when learning new words (see Figure 2). If this tendency remains with a full sample, it could be due to an increase in attention during learning (i.e.similar to a familiarization effect decreasing attention in Condition 2). Alternatively, changing the background might help children better infer the target concept by separating it from its context. We are still collecting data and hope to present at least 23 participants for each age group. Final analyses will consist of logistic regressions. We will discuss our results in light of other research on language development showing enhanced learning under conditions of variability.

Tab. 1: A pair of visual & auditive stimuli in 2 different contexts

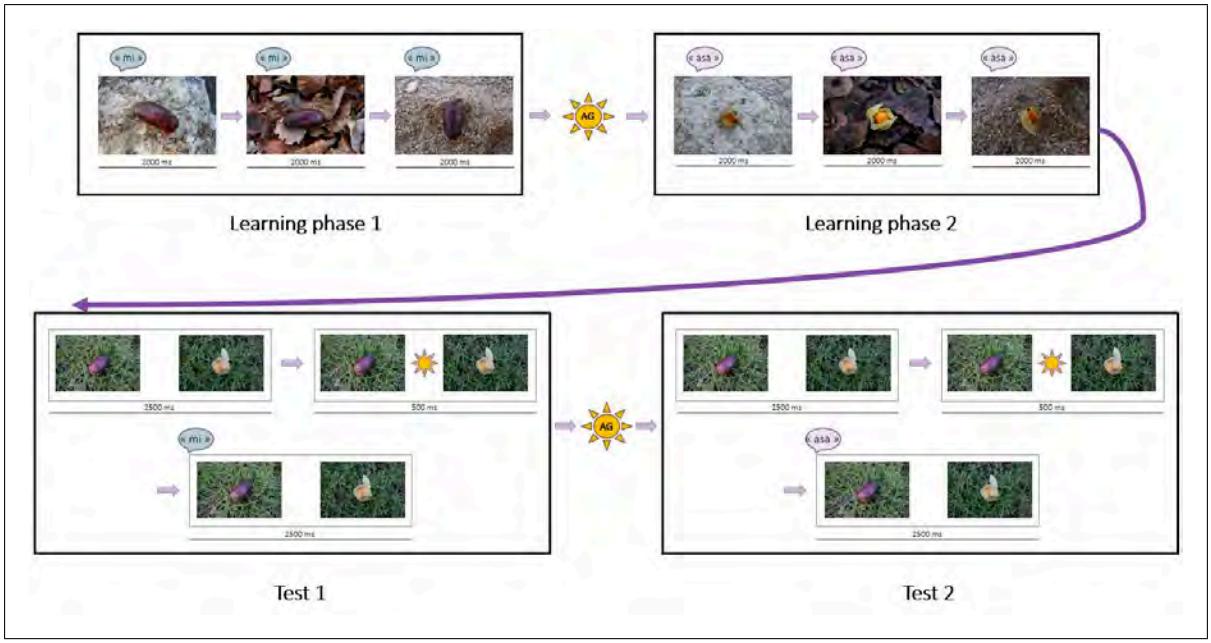

Fig. 1: Procedure of a context-change trial for 3 expositions

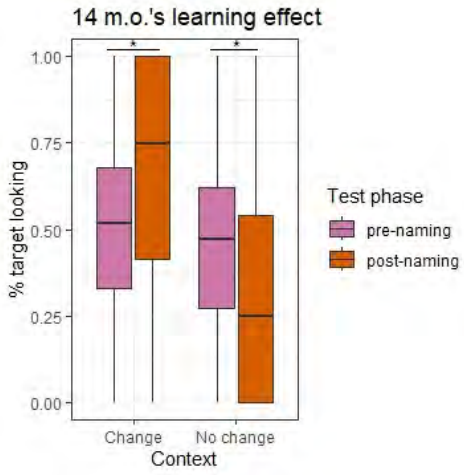

Fig. 2: 14m.o's naming effect by context condition

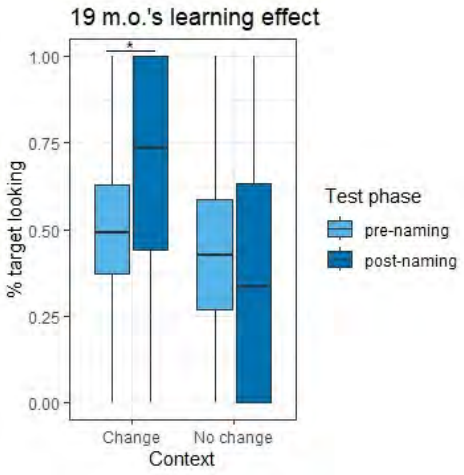

Fig. 3: 19m.o's naming effect by context condition

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Size Sound Symbolism in Mothers' Speech to their Infants.

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Keywords: sound symbolism, infant-directed speech, language acquisition, iconicity

Six-month-olds infer object size based on pitch: high-pitched sounds map onto smaller objects and low-pitched sounds onto larger objects (Fernández-Prieto et al., 2015). The 'sound symbolism bootstrapping hypothesis' (Imai & Kita, 2014) proposes that this might support early understanding of correspondences between words and their meanings; by drawing on iconic pairings between prosodic/phonological cues in language and their corresponding referents (e.g. high pitch to represent smaller objects), infants can begin to develop their understanding of the association between words and their referents, first through iconic cases and later for more arbitrary associations.

For this to be useful in word learning, size-pitch associations must be present in the infant's input. In the present study, we analyse mother-child interactions to test whether sound symbolic cues for object size are encoded in mothers' infant-directed speech. Given that objects in a child's input aren't always congruent with their real-world size (e.g. a toy car is small, whereas a real car is big), we also consider whether violation of relative size expectation affects the likelihood of pitch-size encoding in mothers' speech (i.e. small tree next to a big fish [incongruent]; big cow next to a small spoon [congruent]), and whether this effect is more likely to occur when the size contrast is highlighted, e.g. when a small object is presented next to an identical larger object (strongly highlighted), as opposed to a pair of different-sized different objects (somewhat highlighted) or a randomly-placed selection of different-sized objects (not highlighted).

In our pre-registered study , 40 mother-infant dyads were recorded engaging in 3 tasks, varying in the extent to which the size contrast is highlighted (none/somewhat/strongly) and the real-world expectation of object sizes (congruent/incongruent). See Table 1. Vowel quality was controlled across object labels. The mean pitch of the vowel in the stressed syllable of each object label was extracted and analysed in Praat (Boersma & Weenink, 2021).

Data collection is complete and analysis is on-going. We consider mothers' pitch in relation to actual object size (big vs. small), and congruence with real-world size (congruent vs. incongruent). We test whether obviousness of the size contrast plays a role by analysing mothers' pitch in relation to task (1 vs. 2 vs. 3) and actual object size (big vs. small). If sound symbolic cues are available to infants in the input, we expect mothers to produce words for smaller items with a higher pitch, and larger items at a lower pitch. We expect this contrast to be most apparent in Task 3, where size contrast is strongly highlighted. We have no a priori expectations regarding the direction of the effect of congruence; it is unclear whether mothers will convey only object size in their pitch (i.e. all small items produced with a high pitch, regardless of item type), or whether information about the object's typical size will be encoded in the pitch (i.e. expected large items will be produced with a low pitch, independent of actual object size).

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Table 1: Outline of 3 tasks

Task	Size contrast	Stimuli	Real-world expectation
1	Not highlighted (random presentation)	Poster, seemingly- randomly array of 16 objects varying in size. Contrasting pairs are adjacent in the array.	Contrasting pairs selected for c ongruence with real-world size, e.g. big fish and small tree (incongruent) or small spoon and big cow (congruent)
2	Somewhat highlighted (paired presentation, different objects)	Picture book, 2 objects presented side-by-side	Congruence with real-world size, e.g. big fish and small tree (incongruent) or small spoon and big cow (congruent)
3	Strongly highlighted (paired presentation, same objects)	Picture book, 2 objects presented side-by-side	Object pairs are identical except for size (test condition) or colour (control condition)

Exploring systematicity in the developing lexicon with phonological networks.

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Keywords: phonological development, language acquisition, network analysis, systematicity

Infants' early words are phonologically similar (Vihman, 2016). Deuchar and Quay (2000) show that 13/20 of a bilingual (English-Spanish) child's first words are produced with a CV structure, and many are identical: *car, clock, casa* 'house' and *cat* are produced as /ka/, and *papa* 'daddy', *pájaro* 'bird' and *panda* as /pa/. Infants may produce newly-acquired words in a systematic way, drawing on what they already know in development to further advance their phonological/lexical knowledge and articulatory skills. This would help them deal with the combined challenges of memory, planning and articulation in early phonological development.

Network analysis can account for systematicity in early phonological acquisition, whereby similarity between forms determines their connectivity within a network. If early phonological development is indeed led by systematic production, as the above example suggests, then we would expect the early network to show tight clusters of similar-sounding forms. This hypothesis can be tested via two models of network growth: preferential attachment (PAT; an internally-driven network where new words resemble the most well-connected forms in the existing network) and preferential acquisition (PAQ; an externally-driven network where acquisition reflects the connectivity of the target language, in this case the input, Hills et al., 2009). Previous studies have tested connectivity between *target forms* (i.e. adult target productions) of vocabulary norm data, with mixed results (Fourtassi et al., 2020; Siew & Vitevitch, 2020). In this study, I draw on naturalistic data to test infants' *actual productions* of early words, to identify whether developing phonological networks are driven by PAT- or PAQ-like growth. I propose that PAT offers a more plausible model for phonological development, given that infants tend to adapt early words to fit established production routines (Vihman, 2019), and thus new words are likely to resemble existing words in the network.

I analyze early phonological networks (constituting >1.6 million unique connections) from 9 infants (4 males; Demuth et al., 2006; Demuth & Tremblay, 2008) between 0;11 to 2;6. Phonological distance between each word and each other word in each child's data was computed to establish networks of infant productions using Euclidean distance (see Monaghan et al., 2010), to generate network growth values that represent PAT- and PAQ-like network growth (see Siew & Vitevitch, 2020 for full outline of network growth values). Results show that infants draw on what they already know in early production: logistic regression models with word learning in the following month as a dependent variable (was the word learned: yes or no) showed that PAT growth values, but not PAQ, predicted whether or not a word was learnt in the following month ($\chi^2(2)=11.29$, $p<.01$) when frequency in the input and word length in phonemes were controlled for. There was no interaction with age ($p>.5$), suggesting that this is not only an effect of very early learning, but is retained across the first two years of word production.

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Metaphor and pragmaticalization of Romance motion verbs

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Keywords: Discourse markers, Pragmaticalization, Romance languages

The pragmaticalization pathway from motion verb to discourse marker is well documented (see, for example, papers in Devos & van der Wal 2014). This is especially true in Spanish, where discourse functions of *vaya* 'go', *vamos* 'let's go', *venga* 'come', and *anda* 'walk' have received considerable attention (González Ollé 2002; Romero Aguilera 2006; Polanco Martínez 2013; Tanghe 2016b; Tanghe 2016a; Ruiz-González 2021). These markers serve conative, expressive, and metadiscursive functions, drawing on the metaphor DISCOURSE IS A JOURNEY (Romero Aguilera 2006; Tanghe 2016a). Portuguese shows similar productivity to Spanish, and Italian has discourse markers derived from both GO and COME (Fedriani & Molinelli 2019). French, however, only draws discourse markers from *aller* 'go', not other motion verbs (Drescher 1997; Sierra Soriano 2006; Bunkham 2022: 211–224).

The difference in this metaphor's productivity across Romance remains unexplained and is this study's focus. A cline from most to least grammaticalized of French > Italian > Spanish has been proposed (De Mulder & Lamiroy 2012). If this pattern applies to the pragmaticalization of motion verbs, then we should expect a state of decreased productivity (i.e. with only a GO verb as discourse marker, not COME or other motion verbs) to represent a more advanced stage.

Data are drawn from conversational corpora of French (CFPP2000), Italian (KIParla), Portuguese (CRPC-Oral) and Spanish (CABank), as well as from the 15th century text *Cent Nouvelles nouvelles*, noted for its representation of spoken Middle French (Roger 2013). Modern French discourse markers derived from *aller* 'go' (*allez*, *allons*, *vas-y*) show the full functional range covered by the more varied markers derived from GO, COME, and WALK in Spanish, Portuguese, and Italian. Although there are no discourse markers in Modern French derived from *venir* 'come', examples such as the following are found in Middle French:

(1) *Et **vien** ça ; qu'as tu meffait a ton pere qui te veult tuer ?*
'Come on now (lit. and **come** here), what wrong did you do to your father that he wants to kill you?' (*Cent Nouvelles nouvelles* p. 325)

In this context, Modern French would not permit *venir*, and other markers including *allez* 'go' could perform this expressive function. In this respect, Middle French is typologically closer to Spanish or Italian than to Modern French, an observation that has also been made regarding other features (Smith 2002). Modern French appears to be at a more advanced stage of this pragmaticalization pathway, wherein the GO verb, the least marked motion verb, has taken on its broadest discourse functionality and replaced other verbs.

This analysis supports a pragmaticalization model where later stages show greater abstraction from the source concept and the structural coherence of metaphorical mappings degrades. This aligns with the insight that mappings may become restricted to simplified schemas stored in the target domain (Boroditsky 2000). As the pragmaticalization of motion verbs progresses, mappings to particular kinds of motion in the source domain weaken, allowing the most generic item to take over the paradigm.

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Differential discourse strategies regarding “redundant” information: A functional interpretation on usage frequency of referring expressions in Japanese and Korean

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Keywords: Referring expressions, Usage frequency, Japanese, Korean

Languages can differ in terms of the treatment of pragmatically “redundant” information (Rohdenburg 1996) even amongst “pro-drop” languages with relatively low referential density (Bickel 2003) such as Japanese (J) and Korean (K). While referring expressions (e.g. personal pronouns and demonstratives) that express contextually recoverable information can be retained or omitted in Korean, they are more likely to be omitted in Japanese:

(1) (A met her lover after dumping him.)
A: a. (K) **{Nay-ka / φ}** malhay-ss-canh-a. **{Na / φ}** ne an cohaha-n tako.
I-NOM tell-PAST-NEG-DECL I you NEG love-PRES QUOT
b. (J) **{φ/?Watasi-ga}** it-ta-desho. **{φ / ?Watasi}** anata-wo suki-jyanai.
I-NOM tell-PAST-SFP I you-ACC love-NEG
‘(I) told you. (I) don’t love you anymore.’
(*Cohahamyen Wulinun*, TV drama)

(2) (School teachers are talking about their students.)
A: [Come to think of it, she’s in your class, right? I mean, Jojo’s nephew.]
B: [Gulmi, right?]
A: a. (K) Ney. **{Ku haksayng-un/φ}** kupsikpi nay-ss-na-yo?
that student-TOP the charge for school lunch pay-PAST-INT-HON
b. (J) Ee. **{φ/?Sono gakusei-wa}** kyuusyokuhi, osame-te-masu-ka?
that student-TOP the charge for school lunch pay-ASP-HON-INT
‘Yes. Did (that student) pay for the charge for school lunch?’
(*Cohahamyen Wulinun*, TV drama)

Indeed, our corpus-based investigation of K drama (*Cohahamyen Wulinun*, 8 episodes in total and each episode is one hour long) and J drama (*Zenrakantoku,* 8 episodes in total and each episode is one hour long) scenarios and their translations revealed that (i) while more than 50% of personal pronouns (PNs) in the K drama scenarios are omitted in the J (dubbed) translation, more than 90% of PNs in J drama scenarios are translated into Korean (See Table 1 and Table 2 attached below).

Likewise, (ii) while approximately 60% of demonstratives (DMs) in the K drama scenarios are omitted in the J (dubbed) translation, more than 80% of the DMs in the J drama scenarios are translated into Korean (See Table 3 and Table 4 attached below).

Differential treatments of pragmatically redundant information are arguably related to the two competing motivations: “economy” and “transparency” (Hawkins 1986). Omission of the redundant information, motivated by economy, seems to be the norm in the Japanese discourse organization, arguably aided by pragmatic inference. Omission of the redundant information, though not completely neglected in the Korean discourse organization, is held in check in favor of semantic transparency.

Table1. J translation counterparts to K PNs

Japanese translation counterparts to Korean PNs	Number of tokens
1st /2nd PNs translated into Japanese	463 (46.02%)
1st /2nd PNs omitted in the Japanese translation	**543 (53.98%)**
Total	1006 (100%)

Table2. K translation counterparts to J PNs

Korean translation counterparts to Japanese PNs	Number of tokens
1st /2nd PNs translated into Korean	**442 (94.04%)**
1st /2nd PNs omitted in the Korean translation	28 (5.96%)
Total	470 (100%)

Table3. J translation counterparts to K DMs

Japanese translation counterparts to Korean DMs	Number of tokens
DMs translated into Japanese	100 (41.49%)
DMs omitted in the Japanese translation	**141 (58.51%)**
Total	241 (100%)

Table4. K translation counterparts to J DMs

Korean translation counterparts to Japanese DMs	Number of tokens
DMs translated into Korean	**208 (80.93%)**
DMs omitted in the Korean translation	49 (19.07%)
Total	257 (100%)

Data

Cohahamyen Wulinun (Love Alarm). Available from 2019.08.22, Netflix.
Zenrakantoku (The Naked Director). Available from 2019.08.08, Netflix.

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Cognitive reflexes of language-specific preferences: evidence from memorization and eye-gazing

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Keywords: posture verbs, eye gazing, linguistic relativity, cognitive simulation, memorization

This paper describes an experimental study evaluating the cognitive impact of cross-linguistic preferences in the encoding of locative events (e.g, *The vase is (standing) on the table*) in Dutch, English, and French. Earlier work (Lemmens 2005, 2021; Lesuisse 2022a,b) has shown major encoding differences for such events: Dutch stands out by a marked preference for encoding location via Cardinal Posture Verbs (CPVs, 'SIT', 'LIE', 'STAND') which overtly express the orientation of the Figure, French prefers orientation-neutral existence verbs like *être* 'be', and English straddles the middle with a marked preference for *be* but the possibility to still rely on CPVs. Our experimental study involving L1 speakers of Dutch (N=62), English (N=65), and French (N=60) evaluates the impact of these language-specific encoding preferences on spatial conceptualisation (see also Bosse & Papafragou, 2018; Flecken & Van Bergen, 2019), where we expect a heightened attention to orientation for Dutch speakers, and a low attention for French speakers. It does so via a comparison of memorisation performances and gazing behaviour.

The memorisation task gauges the speakers' overall sensitivity to orientational features. Speakers were asked to memorise three series of twelve locative events; each series was followed by a recognition quiz, where one third of the stimuli were novel items, one third, old items, and one third, test items where the orientation of the Figure had been modified. This third category of stimuli is where Dutch participants, and to some extent English participants, are expected to do better, given their linguistically triggered attention to the orientational features of the locative event. The task is run in two conditions: in the *verbal* condition, the participants describe the locative events out loud; in the *non-verbal* condition the use of language is suppressed via an interference task.

The analysis of eye-movements (in both conditions) compares the speakers' online foci of attention, evaluating on a cognitive level the hypothesis formulated earlier (Lemmens 2005; 2021) that the presence of a base is what triggers the use of *staan* 'stand' in Dutch (even for objects that are more horizontal than vertical) which is motivated by some mental upwards scanning (i.e., away from the base). Dutch participants are thus expected to focus more on the base in their gazing and to display a scanning upwards. Conversely, for French speakers, and to some extent for English speakers, such gazing behaviours are not expected as they are less triggered by their language to attend to the orientational features of the event.

Our findings (supported by binomial mixed-effects logistic regression analyses) show that in both verbal and non-verbal conditions, Dutch stands out from English and French. First, Dutch speakers *are* better at picking up orientational changes of the Figure than the English speakers who, in turn, are better than the French speakers. Second, Dutch speakers *do* pay more visual attention to the base of the Figure than French and English speakers but, contrary to our expectations, do not display orientational scanpaths on vertical Figures. Strikingly, in the verbal condition, English and Dutch gazing strategies do align more than in the non-verbal condition, confirming the in-between status of English in the domain of location. The observed differences confirm the cognitive impact of language-specific preferences on the conceptualisation of locative events.

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The Wickedly Flexible Adele Dazeem Construction

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Keywords: construction grammar, analogy, memes, creativity, emergent properties

At the 2014 Academy Awards, John Travolta introduced performer Idina Menzel as "Adele Dazeem," a usage event that achieved meme status. This paper argues for and situates "the Adele Dazeem Construction" within a taxonomy of usage patterns. Instances of this construction are references, creative coinages, and errors that highlight analogical connections between constructions and other knowledge (cf. Hockett 1987, https://knowyourmeme.com/memes/adele-dazeem).

We first place two meme types at opposite ends of an analogical continuum. The first type is "if a giraffe wore a necktie" (Figure 1), which invites the viewer to construct a mental space blend, where the input spaces are an animal body and human clothing. In the blend, a human and an animal body must be structurally aligned (Gentner 1983, Fauconnier and Turner 1991). Due to its formal fixedness, language users who have seen one instance of this meme can extend their inferences to additional memes using the same template. The second meme type, which relies on more abstract resemblance, is "generated by a neural net". Instances of this meme may either be generated by an algorithm or by a human faking an algorithmic output. Rather than using a formal template, the meme highlights emergent consistencies in the source domain and the viewer's ability to recognize them.

"Adele Dazeem" is situated between these extremes as an instance of another meme type, "similar but legally distinct". This type differs from the "neural net" meme in that human intentionality is foregrounded; a human creator has a legal motivation to create a name that evokes a specific conceptual frame, however, the reference must also be abstracted from the particular aspects of the frame so as to avoid legal retaliation. While the production process that generated "Adele Dazeem" was qualitatively different from intentional examples, we argue that they belong to the same type: *Adele Dazeem* would be a good candidate for an "off-brand" or "plausibly deniable" version of the intended referent, *Idina Menzel*. This sweet spot between formally specified and fully emergent has been recognized in the creativity literature (Giora et al. 2017), and situating this construction type amongst the others highlights the gradient and analogical nature of linguistic knowledge.

Following Dancygier and Vandelanotte (2017), we argue that the cycles of iteration and remixing in memes yield multimodal constructions, and even quite bizarre memes can be analyzed with standard cognitive linguistic tools, as they draw on similar aspects of human cognition. In cognitive/constructional approaches, constructions vary along several related continua. Constructions vary by the amount of internal symbolic complexity they present (Langacker 2008) and their degree of symbolic schematicity (Croft and Cruse 2004). Instances of a particular construction may range from more established and conventional to more novel (Booij 2010, Lepic 2019, Goldberg 2019). Surveying this creative language taxonomy, we conclude that the "Adele Dazeem Construction" highlights the gradient and analogical nature of linguistic knowledge; memes ranging in their degree of formal specificity can be fruitfully analyzed as multimodal constructions.

***Fig. 1**: Two instances of a multimodal meme in which the structure of an animal body must be aligned with structure of a human body; a quite fixed meme form*

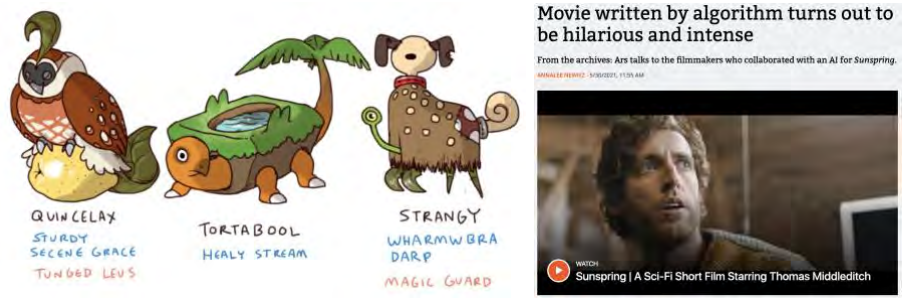

***Fig. 2**: Two instances of a multimodal meme in which the structure is construed as having been broadly derived from a general source domain (from https://www.aiweirdness.com/pokemon-generated-by-neural-network-17-03-31/ and https://arstechnica.com/gaming/2021/05/an-ai-wrote-this-movie-and-its-strangely-moving/)*

***Fig. 3:** Two instances of a multimodal meme in which the form that is used indirectly evokes a specific referent (from https://www.youtube.com/watch?v=f1QgMxXfaw0 and https://www.hy-vee.com/aisles-online/p/1853977/HyVee-One-Step-Tasteeos-Cereal)*

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A cognitive sociolinguistic analysis of the theme-recipient alternation in Mandarin Chinese, and of its sensitivity to lectal factors

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Keywords: probabilistic grammar, theme-recipient alternation, Cognitive Sociolinguistics, Mandarin Chinese, lects

Research Question: Guided by theorizing in Cognitive Sociolinguistics, the present study seeks to explore the probabilistic nature of lectal variation in Mandarin Chinese. Specifically, it aims to empirically assess how the theme-recipient alternation (or: "dative" alternation) in Mandarin is conditioned by language-internal and language-external constraints, and how these constraints interact with each other.

Background: As in other languages, in Mandarin the ordering of the theme and the recipient constituents in ditransitive constructions is variable: the theme can occur before the recipient (theme-first), as in (1), or the recipient can occur before the theme (recipient-first), as in (2). Despite previous empirical analysis of the alternation with corpus data (e.g., Yao & Liu 2010; Zhang & Xu 2019) and psycholinguistic experimentation (e.g., Liu & Hwang 2022), there is still a dearth of analysis investigating how lectal factors such as region and genre affect the effect sizes and/or directions of the language-internal constraints such as end-weight effects. Given our knowledge of the impact of lectal factors on grammatical alternations in languages such as English (e.g., Röthlisberger et al. 2017) and Mandarin (e.g., Tian et al. 2022), it would be surprising if the theme-recipient alternation should turn out to be stable in the face of lectal factors.

(1)	他	送	了	[书]$_{theme}$	给	[我]$_{recipient}$
	tā	*sòng*	*le*	*shū*	*gěi*	*wǒ*
	1SG	send	PST	book	DAT	3SG

"He sent a book to me.""

(2a)	他	送	了	[我]$_{recipient}$	[书]$_{theme}$
	tā	*sòng*	*le*	*wǒ*	*shū*
	1SG	send	PST	3SG	book
(2b)	他	送给	了	[我]$_{recipient}$	[书]$_{theme}$
	tā	*sònggěi*	*le*	*wǒ*	*shū*
	1SG	send-give	PST	3SG	book

(2c)	他	给	[我]$_{recipient}$	送	了	[书]$_{theme}$
	tā	*gěi*	*wǒ*	*sòng*	*le*	*shū*
	1SG	DAT	3SG	send	PST	book

"He sent me a book."

Data & Method: We obtained the data using a total of eight corpora of Mandarin Chinese covering two regions (Mainland Mandarin, Taiwan Mandarin) and five genres (telephone conversation, broadcast news, press, fiction, non-fiction) of Mandarin. We extracted *N*=4,266 tokens from the corpora, using a verb list of 62 ditransitive verbs obtained from the extensive literature on verbs that may appear in theme-recipient constructions in modern Mandarin (e.g., Li & Thompson 1981; Zhu 1979) and intensive hand-coding. We used mixed-effects logistic regression modeling to gauge the conditioning of the theme-recipient alternation. Model selection followed a forward selection procedure with sequential ANOVA tests. The optimal model contains 11 fixed-effects, 2 random effects (verb, corpus structure), and 2 interaction terms (variety: recipient complexity, genre: theme concreteness).

Findings & Implications: Our analysis reveals that the recipient-first ordering is consistently more frequent than theme-first ordering and even more common in Mainland Mandarin than in Taiwan Mandarin. Regression analysis also suggests that the probabilistic grammar that shapes the theme-recipient alternation is fundamentally stable across regional and genre varieties of Mandarin. This general stability notwithstanding, significant differences are detected regarding the importance of language-internal constraints across different language-external constraints. Crucially, we found that recipient complexity has a much greater effect in Taiwan Mandarin than in Mainland Mandarin, and that the effect of theme concreteness is significantly reduced in telephone conversation transcripts compared to other genres. Analyzing a language that is typologically unrelated to the languages focused by previous scholarships, our findings contribute to current research in Cognitive Sociolinguistics by assessing the extent to which language users' probabilistic grammar varies across lects.

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A Multivariate Quantitative Study on English Modal Construction from a Variationist Linguistics Perspective — A Case Study of *must, have to, have got to*

Keywords: *modals; semi-modals; multivariate quantitative research; constructional alternation*

Abstract: From a corpus-based variationist linguistics perspective, this study explores the major factors influencing the choice of "must", "have to" and "have got to" , these three constructions and its diachronic evolution in American English, by means of COHA corpus data and R software. After the annotation of nine predicative factors including tense, genre, year, etc, Conditional Inference Tree modal and Conditional Random Forest modal are used to analyze the data. The results show that: The frequency of "must" is declining from 1810 to 2009 in American English; Although there is still a high frequency of "have got to" in the "novel" genre, the frequency of "have got to" is decreasing in the diachronic evolution. The frequency of "have to" is on the rise. The main factors influencing the selection of these three constructions include "tense", "genre" and "year". In addition, the influence of other predictive variables selected in this study on the selection of three construction variants is not obvious. Through further analysis on the standardized frequency distribution of "must" and "have to" from 1820 to 2019 in American English, it can be concluded that when expressing the meaning of "necessary to do sth.", there was a trend that "must" was gradually replaced by "have to".

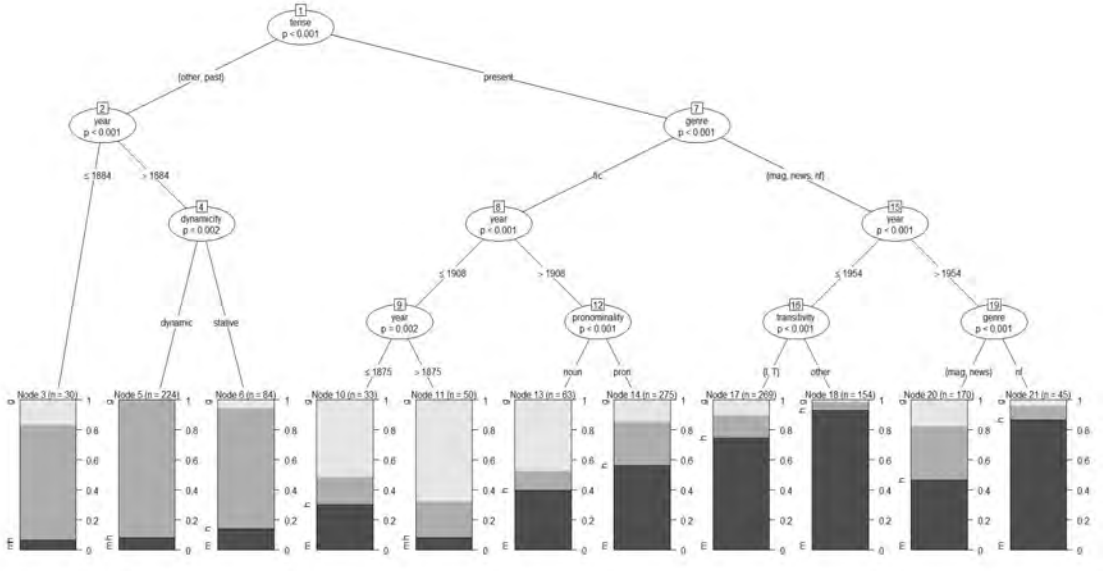

Figure 1 Conditional Inference Tree model on predictive variables influencing the choice of *must, have to* and *have got*

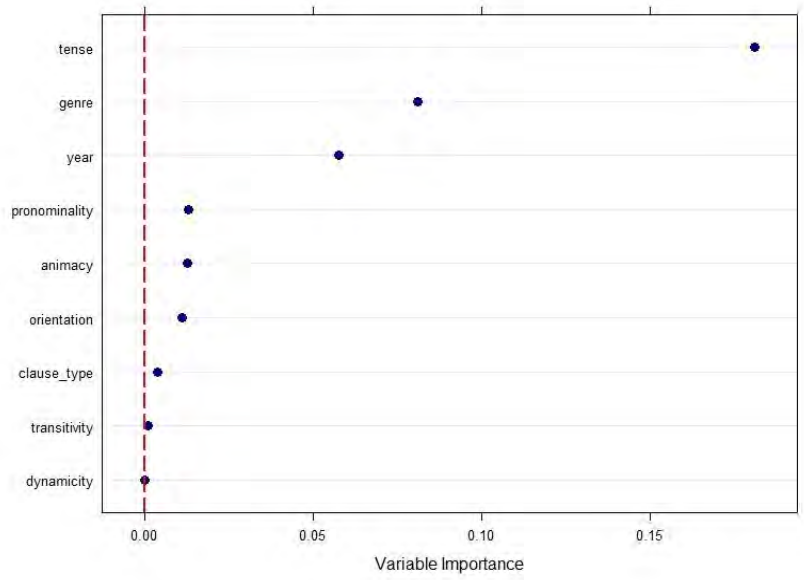

Figure 2 Conditional Random Forest analysis on predictive variables influencing the choice of *must, have to* and *have got to*

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Delicate women and scraggy men – Implicit stereotype marking through attribution

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Keywords: corpus linguistics, stereotypes, categorization

Language and its impact on social and gender equality have been of ongoing interest from a corpus and text linguistics perspective (cf. e.g., Schröter et al. 2012, Elmiger 2009, Lautenschläger 2017). Gender-fair writing strategies and recommendations often focus on simple noun phrases and their morphological marking of grammatical and social gender (cf. e.g., Diewald/Steinhauer 2017, Kotthoff/Nübling 2018, Pettersson 2011). However, gender stereotypes can also be evoked implicitly, regardless of the morphological properties of their heads, by co-text features like attributes modifying noun phrases where the morphological properties of the head cannot be modified by e.g., derivation for a gender-fair use. The present paper aims to investigate the role of adjectives in the modification of the referentiality of complex noun phrases and their impact on gender-fair language use.
We compare data for the lexemes *Frau* ('woman') and *Mann* ('man') compiled from two different corpora. 909 occurrences from the DWDS Die ZEIT online (2017-2018) newspaper corpus (Geyken 2017) and 850 occurrences from a manually compiled newspaper corpus using the Nexis Uni database for SPIEGEL ONLINE (2019). The data consists of sentences containing noun phrases with attributive adjectives and *Frau* or *Mann* as their head, such as (1) and (2).

(1) *Sie ziehen von **einer schönen Frau** zur nächsten, meistens ohne Konsequenzen.* 'They go from one beautiful woman to the next, mostly without any consequences.' (Bastian Midasch, 05.10.2019, *Gewöhnt euch daran, dass ich date*. SPIEGEL ONLINE)

(2) *Kann ich jene Kränkung und Angst nachempfinden, wenn sich **ein großer, starker Mann einer schwächeren Frau** gewaltvoll nähert?*
'Can I relate to that offense and fear when a big, strong man violently approaches a weaker woman?'
(Die ZEIT online, 25.10.2017, http://www.zeit.de/kultur/2017-10/sexismus-maenner-feminismus-empathie)

The data were tagged according to the head of the noun phrase, its attribute, and two different approaches to the semantics of the attributive adjective: First, the referential semantics of the attributive adjectives based on Bierwisch (1987) and Rachidi (1989), and second the semantic adjective classification of Hundsnurscher/Splett (1982). We propose that different attribution strategies are employed when talking about men and women that evoke and strengthen particular gender stereotypes. Our data show that on the one hand, these attribution strategies are reflected in the referential semantic properties of the modifying adjectives. On the other hand, substantial semantic differences are evident in connection with the lexemes *Frau* and *Mann*.
The referential semantic classification of adjectives leads us to assume that adjectives with the features [+restrictive, +absolute] are highly involved in the formation of gender stereotypes, because these adjectives can maximally modify the referentiality of noun phrases. This process is facilitated by a high connotative potential of adjectives such as *beautiful* (Kaiser 1979, Pinkal 1985).
Using the semantic adjective classification, both lexemes in both corpora showed clusters of time-related adjectives (*young*, *old*). While in the ZEIT online corpus the lexeme *Frau* frequently co-occurs with general (*other*), social- (*privileged*), and body-related adjectives (*attractive*), quantifying (*one*, *both*) and body-related adjectives predominate in the SPIEGEL ONLINE corpus. The lexeme *Mann*, on the contrary, is commonly used with social (*old*, *white*, *heterosexual*) and general adjectives (*good*) in the ZEIT online corpus. A similar distribution can be observed in the SPIEGEL ONLINE corpus, which is again supplemented by numerous quantifying adjectives.

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Semantic Typology: New Approaches to Exploring Conceptual Transfer in Bilingualism

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Keywords: semantic typology, spatial references of reference, bilingualism, conceptual transfer

This paper introduces the methods of semantic typology, the study of cross-linguistic semantic categorization, and its recent application to bi-/multilingualism. Since the mid-1950s, this line of research has centered on the fields such as color terminologies, the framing of motion events, and the semantic categorization of space. Aside from the traditional questionnaire for elicitation, these programs typically embraced multimodal stimuli such as color chips, drawings, objects, photographs, video clips, toys, and even substances with particular smells and tastes, depending on the research questions. This multimodal methodology allowed researchers to acquire interactional information and unexpectedly enhanced participants' engagement in these language games. Previous studies unveiled the specific use of unattested language structures and possible factors attributed to such variation in a given language. Recent research on Mesoamerican languages has discovered the bi-/multi-lingual effects on the spatial referencing strategies in discourse and recall memory.

This case study applies this method to the exploration of the use of the spatial descriptions of Taiwanese Min Nan (TMN)-Mandarin Chinese (MC) bilinguals compared to monolinguals and possible factors attributed to such variation. TMN shows a unique polysemy pattern in its spatial relators, conflating 'front' with 'right' and 'back' with 'left' with a preference for geocentric representations in small scale space; in contrast, MC speakers strongly prefer egocentric and intrinsic representations. Extended the research design of Bohnemeyer et al (2015) to the scope of bilingualism, two discourse and one recall memory tasks were conducted to explore how language, culture, and environment affect the use of spatial referencing strategies in TSM-MC bilinguals compared to monolinguals. A total of 350 participants aged between 19-92 years old were recruited for the tasks. The results for response types by language populations manifested that, unlike the alignment found in the monolingual populations, both bilingual groups displayed a mismatched preference between discourse and recall memory. Transfer and convergence effects emerged between the two bilingual groups. The statistical analysis shows that in addition to language and environment, education was a significant factor in both tasks across Taiwanese populations, suggesting that, since these preferences are regarded as conventionalized cultural practices, education plays a crucial role in (re)formulating spatial representations.

The second discourse task attempted to elicit more reference to the regions in the sagittal and coronal planes of the reference entities across populations. The analyses of this linguistic task have confirmed several language-specific observations across Taiwanese populations. An initial and unexpected finding revealed that young speakers tend to replace coronal with vertical relators in the 3-D task, suggesting future research on the selection of the relators, their associated frames, and potential factors.

This approach proves to be an alternative to capture the unattested structures in language and cognition in a bi-/multi-lingual society. This application makes crucial contributions to investigating conceptual transfer of bilingualism in spatial cognition by examining crosslinguistic influence to (non)verbal evidence of language-specific conceptualizations (Jarvis 2016).

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Working memory asymmetrically modulates auditory and linguistic processing of speech

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Keywords: speech comprehension, working memory, neural tracking, auditory encoding, linguistic processing

Background

Speech comprehension entails multiple processing stages from early sensory encoding of acoustic features to higher-level linguistic processing, e.g., semantic integration and syntactic parsing. Evidence has suggested that this complex process suffers from working memory (WM) load imposed to listeners (e.g., Mattys & Wiget 2011), but it remains elusive which stage is the main locus of the WM effects on speech processing. One methodological challenge to addressing this issue lies in the difficulty in dissociating the mental representations of different processing stages of speech.

Methods

Here, we draw on a recently developed multiscale frequency-tagging paradigm, which allows to separate the neural responses to different linguistic units in the frequency domain (Ding et al. 2016). By doing so, we concurrently measure how the WM load modulates neural activity tracking three levels of linguistic units, i.e., syllables, phrases, and sentences. The neural tracking of syllable is closely linked to the encoding of speech envelope as an important acoustic feature (Ding et al. 2017), while neural tracking of phrases and sentences reflects rule-based linguistic processing (Jin, Lu & Ding 2020). Participants (N = 60) engage in a sentence comprehension task (N *of sentences* = 152) while recording their electroencephalogram (EEG) data, and the WM load is manipulated by asking them to memorize either auditory verbal sequences (Exp 1 and Exp 3) or visual patterns (Exp 2; see Fig. 1 for the speech stimuli and task design).

Results

It is found that verbal and visual WM load modulate speech processing in similar manners: Higher working memory load attenuates neural activity tracking of phrases and sentences, but enhances neural activity tracking of syllables (see Fig. 2 for the results). Since verbal and visual WM load similarly influence the neural responses to speech, such influences may derive from the domain-general component of WM system.

Discussion

Our data reveal that WM load asymmetrically modulates lower-level auditory encoding and higher-level linguistic processing of speech. The reversed direction of the observed WM effects possibly reveals a load-dependent reallocation of processing resources, which might function as a compensatory mechanism for degraded analyses of higher-level linguistic information. This compensation interpretation in line with the cue integration hypothesis, which posits that language comprehenders are capable of weighting signal-based and knowledge-based processing flexibly and adaptively against a given situation (Martin 2016).

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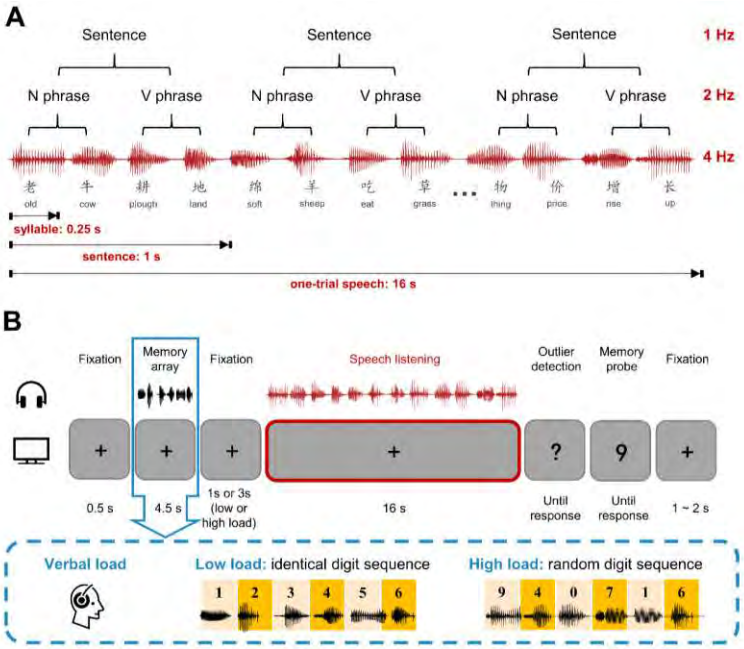

Fig. 1: Stimulus and experiment procedure. ***A****, An isochronous sequence of syllables was presented at a constant rate of 4 Hz in the speech listening task. Two syllables grouped into a phrase and four syllables grouped into a sentence, and thus phrases and sentences were presented at 2 Hz and 1 Hz respectively. The stimuli were in Chinese and their English counterparts are shown for illustration.* ***B****, In Experiment 1, the working memory task was to memorize a string of six digits before speech listening and report afterwards whether a memory probe (a digit) was present in the memorized sequence. In a high working memory load condition, the six digits were randomly chosen while in a low working memory load condition, the digit sequence was fixed, i.e., "1, 2, 3, 4, 5, 6". EEG responses were only analyzed during the speech listening session (shown in red). The procedure of Exp 2 and Exp 3 are similar with that of Exp 1, except that visual patterns (Exp 2) and more complex verbal sequences (Exp 3) were memorized by the participants.*

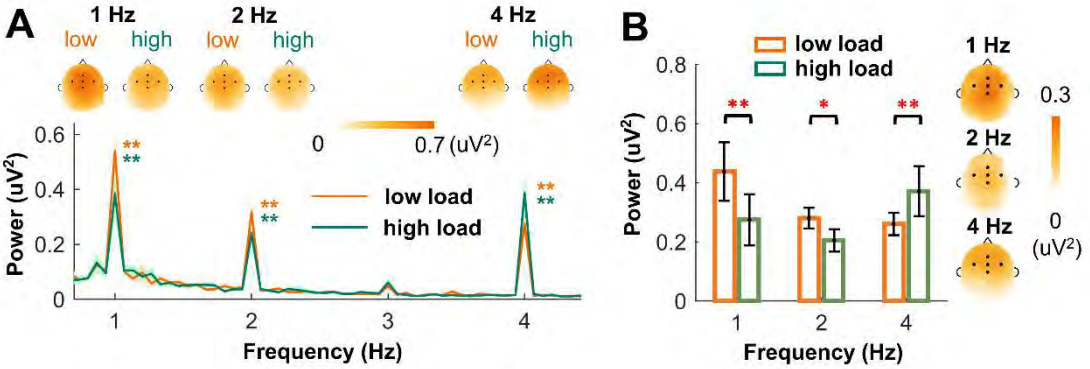

Fig. 2: EEG response spectrum and topography in Exp 1. ***A****, The EEG response spectrum averaged over participants and channels. Three response peaks were observed at the sentential, phrasal, and syllable rates (1, 2, and 4 Hz, respectively). The shaded area indicates one SEM across participants. Stars in orange (low load) and green (high load) indicate significantly higher power at the target frequency than at neighboring frequency bins. The topographic plots are illustrated above the spectrum, showing a central-frontal distribution.* ***B****, Normalized EEG response at the target frequencies. The normalized power was generated by subtracting the mean power of four neighboring frequency bins. The error bars indicate SEM over participants. Significant cross-condition differences were observed at all target frequencies (i.e., 1, 2, and 4 Hz), as indicated by red stars. The topographic plots illustrate the difference between the low-load and high-load condition (1 and 2 Hz: low minus high; 4 Hz: high minus low), generally showing a central-frontal distribution. Five black dots in the topographies refer to the position of FCz (middle), Fz (upper), Cz (lower), FC3 (left), and FC4 (right). Similar patterns are shown in Exp 2 and Exp 3. *p < 0.05, **p < 0.01.*

The alternation of the Mandarin disposal constructions: quantifying the evolutionary dynamics across twelve centuries

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Key words: disposal construction, the ba-construction, syntactic alternation, logistic regression modeling, Mandarin Chinese

Abstract: The Mandarin disposal construction encompasses the ba-construction and the jiang-construction. They are SOV syntactic patterns (e.g., Light 1979; Sun & Givon 1985) in which the object marker *ba* or *jiang* precedes the object, which is in turn followed by the predicate verb. The structure can be represented as "subject/NP1 + *ba*/*jiang* + object/NP2 + verb (+ X)", as in (1).

(1) a. 我们最后决定**把**包弟送到医院去……。

Wǒmen	*zuìhòu*	*juédìng*	***bǎ***	*Bāodì*	*song*	*dào*	*yīyuàn*	*qù…*
We	finally	decide	**BA**	Baodi	send	arrive	hospital	go

'We finally decided to send Baodi to the hospital…'

b. 她已经**将**一头乌亮的美发全部剃光，人也苍白瘦削了。

Tā	*yǐjīng*	***jiāng***	*yītóu*	*wūliàng*	*dì*	*měifǎ*	*quánbù*	*tì*
She	already	**JIANG**	one.head	black.bright	GEN	beautiful.hair	all	shave

guāng,	*rén*	*yě*	*cāngbái shòuxuē*	*le.*
unleft,	people	also	pale thin	PERF.

'She has shaved all her black hair, and she is pale and thin.'

Despite extensive research on the ba-construction in Chinese, the diachronic change of the alternation between the *ba* and *jiang* constructions has received little attention. There are only two documented quantitative studies of the distinction between *ba* and *jiang* in the literature: Xing (1994), and Jing-Schmidt and Tao (2009). There are limitations in Xing's study and her findings still need to be confirmed. As noted by herself, her findings are based on her data set, which only come from two or three prototypical works in each of the four historical periods she investigated and the genres of the works only cover Buddhist scriptures and fictions. Jing-Schmidt and Tao's (2009) study is a synchronic study based on data of modern Chinese.

This study takes a multifactorial approach to examine the language-internal and language-external factors that probabilistically condition the alternation between the two constructions based on diachronic data across twelve centuries from a large corpus of multi-genres. It is found that that there are both stable linguistic constraints (parallelism/syntactic priming, and NP2 length) and fluid constraints (verb type, NP2 animacy, adjunct semantics, genre, and period), and that there are fluctuations in both effect sizes and effect directions of the fluid constraints as a function of time. Moreover, the factor "parallelism" (i.e., syntactic priming) plays a significant role in the diachronic alternation of the two disposal constructions. This study is the first one to take a corpus-based long-term perspective on the variation, from the earliest period whereby the *ba* and *jiang* constructions coexisted to the present, and to gauge the effects of various factors using mixed-effects logistic regression analysis. Theoretically, the present study complements previous research by demonstrating that the processing factor—syntactic priming plays a significant role in the diachronic variation and by quantifying the evolutionary dynamics of the alternation.

Abbreviations

BA *ba* (a disposal marker in Chinese)

JIANG *jiang* (a disposal marker in Chinese)

GEN genitive

PERF perfective marker

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“I regret having children”: A critical metaphor analysis of maternal regret posts on Chinese Weibo

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Keywords: critical metaphor analysis, maternal regret, Chinese mothers, Weibo

It has been widely acknowledged that being a mother should be happy, satisfying, and worthwhile, and regretting motherhood is a strong taboo. In recent years, however, many studies have been analyzing feelings of parental regret using data from online platforms such as Mumsnet, Reddit, vauva.fi, etc (Matley, 2020; Moore & Abetz, 2019; Sihto & Mustosmäki, 2021). Yet, to the best of our knowledge, little study investigates how the overall regretting motherhood experience is conceptualized by Chinese mothers. Metaphor is a useful device to analyze sensitive topics and thus is very suitable to explore mothers’ hidden maternal regret experience in the overarching discourses of normative motherhood in China. To critically explore how Chinese mothers utilize metaphor to represent maternal regret, this study collected 1153 posts with the hashtag “#Do you ever regret having been a mother# (当了妈妈你后悔了吗)” on Weibo, a popular social media platform in China. It has been known that critical metaphor analysis combines different disciplines such as cognitive linguistics and critical discourse analysis and can reveal ideologies behind language by investigating metaphorical representations (Amaireh, 2022). Drawing on this approach (Charteris-Black, 2004), the study analyzed 330 posts implying or indicating maternal regret. Three dominant metaphors were identified. In the *Journey metaphors*, motherhood was represented as a very difficult phase in life, especially compared with the past days without children. Chinese mothers described an imagined, childless and free past life, stressing that they would not have had children or would have had children sooner or later if they could go back in time. In the *War metaphors*, mothers presented having children as a war between a mother and challenges brought by childbearing. These challenges included deteriorating relationships with family members, childcare difficulties and tremendous changes in personal life. In the *Burden metaphors*, motherhood was conceptualized as an enormous burden. Mothers felt that they could hardly bear the burden due to factors such as inadequate preparation for the birth of children, inopportune timing of motherhood, physical and mental changes, loss of self, challenges of raising children, and a lack of family members’ help. Therefore, they regretted being mothers. These findings disclose three major conceptual metaphors that Chinese mother use to discuss their maternal regret experience: motherhood is a difficult journey, motherhood is a battle, and motherhood is a burden.

The results of this study uncover how Chinese mothers construct their maternal regret experience from a cognitive perspective, and can be utilized in counseling practice to help mothers cope with such feelings of regret.

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Subjectivity of Chinese and English Null/Pronoun Personal Subjects: A Grounding Analysis

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Keywords: null/pronoun personal subjects; grounding; subjectivity; variation; multivariate analyses

This article addresses the different degrees of subjectivity conveyed by null/pronoun personal subject in Mandarin Chinese and English daily conversations, based on its nominal and clausal grounding strategies.

The null/pronoun personal subject refers to the alternative usage of null and pronominal forms in a subject position (i.e., the unexpressed Ø vs. I in examples 1-2). Null subjects are rich in Chinese but rare in English (Li & Bayley, 2002; Torres Cacoullos & Travis, 2014). Despite the stark difference in frequency, they found that the variation systematically occurs in each language based on contextual, syntactic, and social factors. This variation is also theoretically supported by Langacker (2008), who proposed that the difference between the two subject forms is motivated by the degrees of subjectivity. However, how the degrees of subjectivity are grounded? What are the differences between persons, and is there any cross-linguistic difference? Questions like these require further investigation.

(1) A: Ø 就这一次坐了公交车，(null subject)

'I took the bus just for this time,'

因为我今儿逛街买东西了。(pronominal subject)

'Because I went shopping today.'

(2) A: I went and Ø got a wet rag and Ø wiped it off the car=.

We seek to answer the questions, building on the nominal and clausal grounding in Cognitive Grammar (CG) defended by Langacker (2008, 2017). In CG, grounding refers to those expressions that establish a connection between the ground (i.e., the speech event, its participants, and the immediate circumstances) and the conceptual content evoked by a nominal or finite clause. A finite clause with or without a subject expression indicates different degrees of subjectivity. Null subjects indicate subjective reading, while pronoun subjects indicate objective reading.

Experimentally, we support this hypothesis with evidence from the potential factors (verb type, tense-mood-evidentiality markers, preceding subjects, persons and conjunction) based on the nominal and clausal grounding strategies. In clausal grounding, the events are grounded by the types of verbs (cognitive, dynamic, and others) or the tense, mood, and evidentiality markers. At the super-clausal level, the subjects are grounded by the common ground, such as given information provided by their preceding clauses and different personal subjects (first-person, second-person, and third-person) representing speakers, hearers, and third parties.

By calculating the factors in mixed-effects models based on a comparative corpus of ten hours of casual conversation in Chinese and English, we find that Chinese null/pronoun personal subjects are more sensitive to the tense-mood-evidentiality of the predicate than those of English. In Chinese, the mood is statistically significant ($\beta = 0.87959$, $p < 0.01$), indicating that null subjects will be more likely to convey subjective readings than pronominal subjects. In contrast, it is not significant in English. English null/pronoun personal subjects are sensitive to the preceding subjects ($\beta = 4.2399$, $p < 0.001$). Null subjects are more likely to be used when they have the same reference with their preceding subjects, and pronominal subjects tend to occur when they are coreferential with their preceding subjects. These results further indicate that Chinese null subjects convey more subjective readings than English ones.

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Explaining the Mirativity of Verbal Classifier Constructions in Mandarin Chinese

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Keywords: mirativity, unexpectedness, cognitive grammar, verbal classifier, adverbial adjunct

The adverbial adjunct realized by a verbal classifier construction (VCC) in Mandarin Chinese generally points to the result of an event and forms a mirative expression. In (1), the adverbial realized by the VCC consisting of the numeral *yi* (one) and the classifier *jiao* (foot) modifies the verb *ti* (kick) and points to the result *fei* (away). Specifically, the course of action measured by the VCC is generally of a short duration (the numeral is limited to a smaller number). This character reflects the violation of expectations by the outcome of an unexpected event or the deviation of the amount of action from what was expected.

(1) Qinghua yi jiao ti fei le Dingtuan de dao.
Qinghua one-Num. foot-CL kick away Perf. Dingtuan Poss. dagger
'Qinghua kicked Dingtuan's knife away with one kick.'

Based on cognitive grammar, this study aims to examine the cognitive mechanism of mirativity or the unexpectedness of VCCs. The study argues that the cognitive processing of expectations and unexpectedness is closely related to encyclopedic knowledge and the viewing arrangement of the event. Using encyclopedic knowledge as a conceptual background, the viewer derives an expectation by taking a vantage point to cast a prospective view of the state of affairs. When an unusual or unexpected result occurs rapidly, the viewer uses this result as a reference point (RP) for comparison with expectations or predictions and then takes a retrospective view of the course of events to reconceptualize the causative process, thus forming a concept of unexpectedness.

(2) Xiaozhang san quan da dao le Xiaoli.
Xiaozhang three-Num. fist-CL knock down Perf. Xiaoli
'Zhang knocked out Li with three punches.'

In (2), the adverbial realized by the verbal classifier construction *san quan* (with three punches) emphasizes the unexpectedness of the result and the rapidity of the process, and it also elaborates on some particular dimensions of the process that caused the result. The elaboration of the process by *san quan* is a reexamination and interpretation of the action, which requires a retrospective view with the result as the RP for mental processing. By elaborating on the process of action, the viewer or speaker coordinates the interlocutors' common ground to achieve effective mirative reading.

Note: Num. = numeral, CL = classifier, Perf. = perfective, Poss. = possessive.

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One size fits all?

Rethinking assessment at the crossroads of teaching+learning+research

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Keywords: Spanish, assessment, L2 pedagogy, empirical testing, cognitive grammar

Applying Cognitive Linguistic (ACL)-inspired principles to the teaching of L2 grammar considerably enhances student comprehension and access to the representational world afforded by the target linguistic system (De Knop, Boers & De Rycker 2010, Tyler, Huang & Jan 2018, Piquer-Píriz & Alejo-González 2020). Classroom experience tells us that an approach of this nature is pedagogically more effective than a more classical-prescriptive instruction (Llopis-García 2010, Alonso-Aparicio & Llopis-García 2019), which often gives students a set of pre-established rules to practice with. Yet, why aren't there, in general, more successful studies and empirical data to ratify what the classroom experience shows?

With this presentation, our aim is to contribute to the understanding of the shortcomings and challenges afforded by the frequent notional-functional (NF) assessment design used in empirical studies for L2 Pedagogy. To this end, we will discuss the results of five classroom quasi-experimental studies and their assessment tests. The first three studies were conducted with A2 level (CERF standards) US-based students at the university level in their learning of the aspectual contrast in Spanish (preterit vs. imperfect). Three groups were compared: a control group, a cognitive instruction group (with the perspective of an embodied prototype within a mental space), and a NF group with a more traditional approach for the tense comparison, which associates each verb tense with a set of temporal markers. Through a pretest/posttest design, each study introduced slight changes to the instruction but most importantly, to the assessment tasks (grammaticality judgment and gap-filling tasks, pedagogical translation tasks, or degree-of-understanding vs. mastery-in-the-use tasks). Overall, results revealed no statistical differences between instructional groups with only one of the studies showing empirical superiority of the cognitive group in just one of the data-collection instruments. Our conclusions point to generalizable shortcomings in the design of assessment tests, which usually employ tasks that are more in line with notional-functional instruction and no doubt favor it. However, we argue that the cognitive group should still be afforded the merit of performing at least as well as its counterpart, even after having been exposed to a completely different pedagogical approach.

For the other two studies (Martín Gascón, Llopis-García & Alonso-Aparicio forthcoming, Martín Gascón 2023) we pose a new question: would results differ if alternative testing tasks explicitly factoring in a cognitive-based approach are implemented? In a pilot study (n=59) and a larger replication (n=160), we address the complex Spanish psych-verb construction (i.e. *gustar*-type verbs) at the A1 level with a pretest/posttest/delayed posttest design for three research conditions (control, cognitive/CG, and notional-functional/NF). Data collection entailed ACL-based assessment for interpretation and production tasks. Results showed that after instruction, the CG significantly outperformed the NF in both tasks. These findings lend support to the effectiveness of cognitive instruction and open up new avenues of research where L2 teaching, learning and research may find common ground to build on.

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Do Parkinson's Disease patients exhibit a reduced use of action words? – A semantic vector analysis of action verb usage in spontaneous production

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Keywords: Action words, Parkinson's Disease, Embodied cognition, Semantic vectors

This study investigates whether German-speaking Parkinson's Disease (PD) patients exhibit a reduced use of action verbs when producing semi-spontaneous narratives. A large body of evidence has been accumulated showing that parts of the motor system contribute to the processing of motor language (e.g. Pulvermüller 2013). These findings are in line with views of Embodied Cognition (Barsalou 1999), which are a cornerstone of Cognitive Linguistic theories. PD is a disease that primarily affects the motor system, leading to an impairment that is expected to also affect the processing of action language. Indeed evidence has been acquired showing that PD patients exhibit difficulties when processing action verbs (see e.g., Boulenger et al. 2008). This evidence comes exclusively from studies employing controlled experimental paradigms, leaving the question unaddressed to what extent this processing difficulty is reflected in the spontaneous language use of PD patients. The present study aims to fill that gap by analyzing the use of action verbs by PD patients in semi-spontaneous narratives, testing the hypothesis that PD patients use less motor action vocabulary than healthy speakers.

More specifically, the present study compares the use of language denoting motoric actions by 15 PD patients and 15 healthy matched controls who produced narratives based on a sequence of pictures depicting parts of well-known fairy tales. Since in previous research processing difficulties have been shown predominantly for the verbal domain, the present study tests the hypothesis of whether the verbs produced by PD patients are less similar to typical action verbs than those produced by healthy controls. Semantic similarity was measured via a semantic vector analysis that calculates the semantic distance of all verbs produced to lists of hand and foot action verbs from Klepp et al. (2017). For the distance measurements we used pre-trained vectors with 100 dimensions trained on verb lemmas (Ehren et al. 2020) of a variant of the German web corpus DECOW16 (Schäfer & Bildhauer, 2012). Initial analyses of the data suggests that the verbs used by PD patients are on average less similar to typical hand and foot action verbs, in line with the hypothesis. This finding would correspond to previous research about the impaired processing of action language in PD patients and extends this result to the domain of spontaneous language use. A reduced usage of motor action vocabulary may be explained by an impaired mental and neural representation of action concepts in PD patients, resulting in a processing burden during language production.

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Seeing gestures can change what numbers you have in mind

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Keywords: co-speech gesture, vague quantifiers, metaphorical conceptualisation of quantity

People talk and think about numerical magnitude in terms of space, and co-speech gestures reflect this, with English speakers using expansive gestures when talking about greater quantities (Winter et al., 2013; Woodin et al., 2020). So far, existing gestural research on the spatial conceptualisation of number has largely looked at gesture production, but we do not know yet whether gestures can also change what number observers have in mind. While we know that gesture can change people's temporal conceptualization of the event an utterance describes (Lewis and Stickles, 2017), there are no similar demonstrations in the numerical domain. This study investigates the influence of outwards and inwards moving co-speech gestures on people's conceptualisation of the numbers indicated by the vague quantifier "several".

Our pre-registered study involved 20 experimental items such as the following: "400 people were at the protest. Several of them got arrested.". We video-recorded two British English speakers, one male and one female, while producing these with either inwards or outwards moving gestures on the underlined portion (see pictures in Figure 1). In experiment I, participants (N = 581) responded to the question: "Guess how many of the 400 people got arrested?" when seeing only one video of either one of the two speakers. We analysed the participants' numerical estimates as a function of gesture with a Bayesian beta-binomial regression model, finding a gesture effect: participants who saw a speaker performing an outward gesture estimated higher quantities (logit coefficient: b=0.63, [0.37, 0.90]) than those participants who saw a speaker performing an inward gesture. In a further analysis, we found that the gestures' magnitude in form of the precise pixel distance between a speaker's hands in the final gesture position was an equally good predictor as using the binary inward versus outward gesture distinction (logit coefficient: b=0.33, [0.20, 0.47])), see Figure 1.

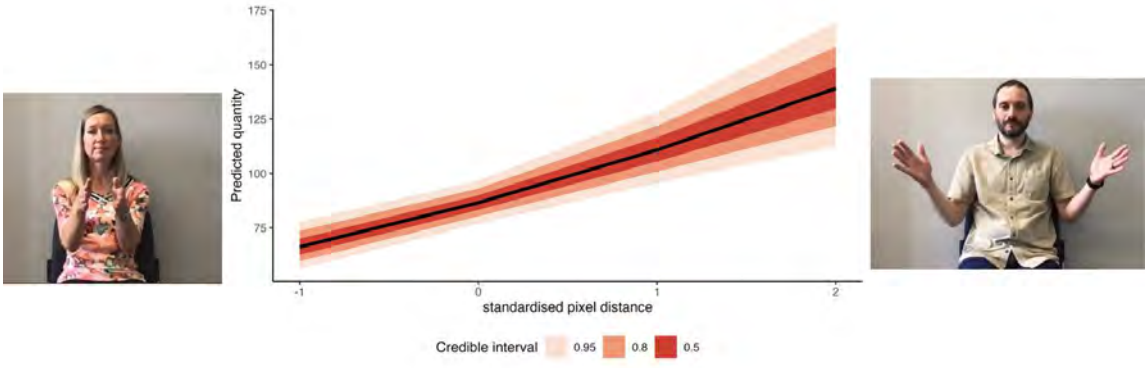

Figure 1: Posterior predicted quantities (y-axis) as a function of distance between the speakers' hand after having executed the gesture (x-axis). For illustration purposes, we included pictures of the speakers for small (left) and large (right) hand distances.

We replicated the gesture effect with two within-subjects experiments (II and III). We found that for both experiments, participants (N=198/N=193) assigned higher quantities when seeing a speaker performing and outward gesture (logit coefficient: b=0.79, [0.54, 1.03]/b=0.80, [0.54, 1.06]) than when seeing the **same** or a **different** speaker performing an inward gesture. The slightly stronger gesture effects of experiments II and III as opposed to experiment I suggest that a within-subject design may be needed to account for differences in what "several" means for different participants (Moxey and Sanford, 1993).

Overall, our results suggest that while the interpretation of vague quantifiers such as "several" depends on the linguistic context and peoples' internal representation, their numerical understanding may be modulated by co-speech gestures. We will discuss the implications of these findings for future work in numerical cognition, multimodal communication, and metaphorical conceptualisation of quantity.

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Irony and echoing: A multidimensional analysis

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Keywords: irony, echoing, implicitness, completeness, conceptual complexity, accuracy

Relevance Theory (RT; Sperber and Wilson, 1995) claims that verbal irony is based on echoic mention (i.e., the interpretive repetition of a previous utterance or thought). For example, the utterance *Melania? Sure she is an angel!*, in a context where Melania is clearly unkind, provides an ironic echo of what the speaker thinks is an erroneous belief (cf. Wilson and Sperber, 2012). However, ironic echoing is more complex than it appears from the standard RT examples. Close examination of a collection of over 200 contextualized examples suggests that echoing is sensitive to at least the following dimensions of analysis, which are not mutually exclusive: (1) implicitness, (2) completeness, (3) conceptual complexity, and (4) accuracy.

Implicitness hinges on the extent to which the echoed material is absent from the ironic utterance thereby shaping its communicative impact. Take the statement: *Yeah, sure. Well, not today; I have a headache*, uttered by a wife in response to her husband's offer to assist her with chores, when she suspected he simply wanted to cajole her into marital intimacy. Her statement echoes the implicature she derives from her husband's move. An explicit echo would have taken this form: *Yeah, sure, you want to help. Well, not today; I have a headache.*

The completeness of an ironic echo (e.g., whether total or partial) depends on focal prominence (Ruiz de Mendoza, 2017). Take a PhD supervisor who tells a doctoral student *I'll be with you to discuss your new thesis chapter at 5 pm tomorrow*. The student, who is aware that her supervisor is invariably late, mutters a wry side remark: *Yeah, right, at 5 pm in your office*. The echo focuses on the part of the supervisor's utterance that bothers the student.

Echoic complexity goes beyond mere repetition. We distinguish between echoic cumulation, echoic compounding, and echoic chains. In cumulation the ironist strengthens the ironic impact of an utterance by listing in succession synonymous expressions that can echo one single target thought (*Yeah, right, an angel, a saint, a treasure!*). Compounding combines different utterances into one single echo: *Yeah, right. You do the heavy tasks, as you say, by dusting the furniture, while I do the light tasks of sweeping, ironing, and washing dishes*. In an echoic chain, the ironist echoes a previous echo: *Yeah, right. Mary IS an angel* (to disprove the previous ironic echo questioning the girl's virtues).

Finally, (in)accuracy is used to control the range of meaning implications arising from the echo in a cognitively economic way (Ruiz de Mendoza & Barreras, 2022). An example of intended inaccuracy is a situation where an indolent employee says: *Let's get started. Hands on deck!* A fellow worker replies: *Yeah, right… Hand on deck*. The inaccurate singular "hand" is used to point to the lesser involvement of the shameless worker.

All in all, the present study provides basic analytical criteria resulting in a higher degree of systematization and a finer degree of analysis than previous studies on ironic echoes.

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Interaction between word processing and low-level visual representation in autistic college students

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Keywords: embodiment cognition, autism spectrum disorder, visual perception, continuous flash suppression.

Embodiment cognition has recently been used to explain several cognitive-behavioral aspects of autism spectrum disorder (ASD) (Crespi & Dinsdale, 2019; Delafield-Butt et al., 2021; Eigsti, 2013; Moseley & Pulvermueller, 2018; Kilroy et al., 2021). Various investigations establish that sensorimotor difficulties are linked to social communication problems exhibited by ASD (Batool & Shehzad, 2018; Conson et al., 2015; Fanghella et al., 2022; Hellendoorn et al., 2014; Hellendoorn et al., 2015; Hildebrandt, Koch & Fuchs 2016; Peleg et al., 2018). However, it is still necessary to determine to what extent the interaction between sensorimotor mechanisms and language processing is affected in people with ASD (Hannant, 2018). One scope of the embodiment perspective of language and cognition suggests that word processing is involved in constructing low-level visual representations (Ostarek & Huettig, 2017) in typical development (TD) people. In this sense, this research aimed to determine if the relationship between word processing and low-level visual representation is present in ASD. For this, we use the experimental paradigm of continuous flash suppression based on binocular rivalry (Pournaghdali & Schwartz, 2020). 19 ASD and 22 typical development (TD) college students participated in this study. Participants with ASD were evaluated with the standardized diagnostic instruments ADOS-2 and ADI-R. Each participant had to observe a series of images of masked objects under the effect of continuous flash suppression in conjunction with the presentation of oral words that could be congruent or incongruent with the objects in the masked images. We analyzed detection rates in a mixed model, including the congruent/incongruent condition and ASD/TD group as fixed effects. Each participant and each experimental item were considered as random effects. We also analyzed reaction times in a mixed model with the same fixed and random effects as in the previous model. The preliminary results of the detection rates showed an interaction effect between the congruent/incongruent condition and the ASD/DT group (SE= 0.007; df 4173.525; t=2.078; p=0.038). No interaction effects were observed on reaction time. TD group had a 50% hit rate in the congruent and 45% in the incongruent conditions. The ASD group had a 54% hit rate in the congruent and 55% in the incongruent conditions. These results imply that the oral word congruent condition facilitated the object recognition hit rate in TD. This effect was not observed in the ASD group. According to our results, people with high-functioning ASD lack an effect of word processing on the construction of low-level visual perceptual representations. This supports the conclusion of Hannant (2018) that people with ASD struggle to construct an embodied representation of language.

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Into the er cage: Frequency effects and fluency in aphasia

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Keywords: Aphasia, Disfluency, Frequency effects

Linguistic research of aphasia has been traditionally dominated by structuralist, rule-based approaches. However, recent studies have shown that usage-based, constructionist approaches may be better suited for the description and analysis of language processing in aphasia (Bruns et al. 2021; Hatchard 2021). In this paper, I focus on the relationship between frequency and fluency in the production of prepositional phrases by Czech speakers with aphasia to demonstrate how usage-based linguistics and aphasiology can be combined for the benefit of both.

Frequent disfluencies are one of the hallmark features of language in aphasia. Disfluencies are associated with increased processing load and various factors have been investigated that may influence the occurrence of disfluencies, including strength of association between words (Goldman-Eisler 1961; Schneider 2016). From a usage-based perspective, high transitional probability can be connected to chunkhood and entrenchment. It can be expected that the probability of disfluent production will be lower between words that are represented and retrieved as chunks.

I analyzed a total of 663 PPs with nominal complements extracted from a corpus of discourse production of 10 Czech speakers with aphasia. The PPs were coded as completely fluent or as containing pre-phrasal or phrase-internal disfluencies. Furthermore, frequency characteristics (lemma and word form frequencies and forward and backward transitional probabilities between the preposition and the complement) were extracted from corpora of written and spoken Czech. The distribution of disfluencies was analyzed using descriptive, exploratory data analysis with focus on the role of frequency and transitional probability.

As expected, the analysis has shown that speakers with higher levels of fluency produced more fluent PPs overall. However, even participants with nonfluent aphasia produced some fluent PP tokens. PPs containing an adnominal modifier were generally produced less fluently than bare P N constructs, suggesting increased processing load associated with a more complex internal structure of the PP construction. Crucially, the data also suggests that fluency is modulated by frequency. Fully fluent production is associated with complements with high lemma frequency (e.g. *za babičkou* 'to grandma') and with lexicalized PPs with reduced compositionality (*v pohodě* 'alright'). Furthermore, PPs that are parts of larger constructions such as *prosil o pomoc* 'was begging for help' also tend to be fluent. The data also shows an interesting difference between pre-phrasally and phrase-internally disfluent production. PPs with high backward transitional probability have a higher proportion of pre-phrasal disfluencies compared to PPs where the association between the preposition and the complement is weaker, suggesting that more frequent PPs are retrieved as wholes. For instance, *do klece* 'into (the) cage' (backward transitional probability .105) occurs several times with phrase-internal disfluencies in the corpus, while *v kleci* 'in (the) cage' (.298) was produced fluently or with a pre-phrasal disfluency.

The data can thus be interpreted as supporting evidence for the usage-based construction grammatical view of language representation. Simultaneously, the observed patterns could be used for the development of novel strategies in aphasia assessment and therapy, based on item-specific distributional characteristics.

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Windowing assemblies in Chinese and English use

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Keywords: windowing assemblies, English, Chinese, Cognitive Grammar

The Dui (coupling) pattern refers to linguistic phenomena in which linguistic units form one-to-one opposition at the form or meaning or structural level to make expressions self-sufficient. Globally, the concurrence of symmetrical and asymmetrical coupling patterns poses a challenge to both the constituency-oriented and dependency-oriented syntactic theories: although this coupling opposition contributes to the completion of linguistic chunks, it is not treated as a constituent; although this opposition forms a direct linkage, it is not analyzed as the syntactic dependency.

This paper proposes the layered and cyclic conceptual models to describe the coupling pattern in Chinese and English use, based on windowing assemblies in Cognitive Grammar, involving the four descriptive factors: elaboration, correspondence, profiling and constituency. The layered conceptual model motivates the formation of autonomous-dependent assemblies across linguistic windows out of which the subject-predicate frame emerges. In the extension of the subject-predicate frame, the agent-action dependence is schematized into the baseline-elaboration dependence, e.g. *A book is on the table* vs. *There is a book on the table*. The cyclic conceptual model motivates the formation of the coupling dependence across linguistic windows, out of which the Dui (coupling) frame emerges, e.g. *Nǐ shuō yì yán wǒ shuō yì yǔ* lit. you speak one word I speak one lexicon, which is intended to express We talk to each other. In the extension of coupling frame, the unbound reading of cyclic opposition at the meaning level is weakened to the bound one to schematize the coupled windowing, e.g. *Shānfēng shí gāo shí dī* (lit. mountain moment high moment low; Intended: The mountain goes up and down) vs. *Cóng nǎer lái huí nǎer qù* (lit. from where come go back where; intended: Go back where you came from). In Chinese and English use, the cyclic operation of opposition supports the subject-predicate coupling to accumulate its layers, and the selection of the layered model helps diversify the realization of coupling assemblies. The windowing assemblies with the dynamic prominence between the layered and cyclic models can be used as the general framework of the contrastive study of Chinese and English.

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Some Theoretical Implications of Two Intersubjective Viewing Arrangements: A New Look at Japanese Cognitive Grammar

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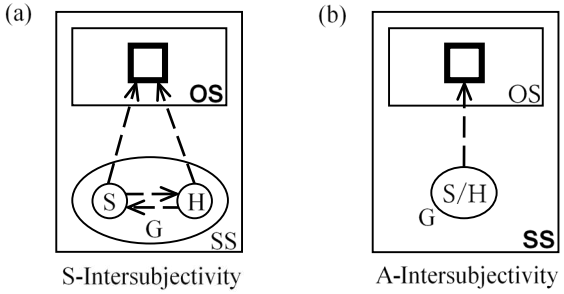
Keywords: intersubjectivity, communication stance, Japanese, grounding, ellipsis,

The aim of this paper is to propose a unified model on intersubjectivity and its related notions within the framework of Cognitive Grammar (Langacker 2008, etc.). Since language is intersubjective in nature, we begin our discussion with observing two different communication stances (face-to-face vs. side-by-side), which leads us to assume that there are two distinct types of intersubjectivity (S-Intersubjectivity vs. A-Intersubjectivity). Based on the face-to-face communication stance, the speaker and the hearer establish an intersubjective recognition (called S-Intersubjectivity) by mutually simulating others' perspectives, which evoke the potential to create a surrogated self in an objective scene (a blended space of the speaker's and the hearers' mental worlds). In A-Intersubjectivity, on the other hand, the speaker's and the hearer's perspectives are assimilated, based on a sense of self-other identification induced by side-by-side communication stance. As illustrated in the figure below, S-Intersubjectivity contains two distinct perspectives while A-Intersubjectivity has only one assimilated perspective.



Although S-Intersubjectivity and A-Intersubjectivity respectively correspond to Langacker's optimal viewing arrangement and ego-centric viewing arrangement, recognizing these viewing arrangements as the distinct types of intersubjectivity plays a crucial role in understanding overt vs. covert grounding, (zero) pronouns and the probability of so-called "ellipsis" in a unified way. We propose that the Japanese grammatical system has evolved based on A-Intersubjectivity, which does not necessarily require the speaker to direct the hearer's attention to the referent because sharing attention between them has already been established by definition. That makes covert grounding, zero pronouns and some ellipses possible in Japanese. The English grammatical system, on the other hand, has developed based on S-Intersubjectivity, which requires the speaker to explicitly direct the hearer's attention to the referent. That is why English speakers have to ground the referents with articles, use verbal pronouns and strictly confine ellipses to some cases.

This distinction of intersubjectivity is, of course, flexible in reality since communication stances are dynamically interchanged. In addition, it is natural to assume that there is a cognitive operation called "objectification of the subject of conception" to meet our flexible event construals. The subject of conception can be objectively construed in two ways: self-introspection (Langacker 1990) and simulation of other's perspective (Tomasello 1999). Ground as the deictic center or the default reference point can also be objectified as a "surrogated" reference point by which the speaker invites the hearer's attention to the target in S-Intersubjectivity. By the same token, Japanese topic marker *wa* provides a reference-point function for the speaker to share his attention with the hearer when they do not establish A-intersubjectivity. This analysis has a potential to open a new perspective to capture language diversity systematically.

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A constructional approach to the lexicalization of synsets in African WordNet: The case of possessive constructs

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Keywords: Constructional approach, Grammaticalization, Lexicalization, Possessive construction, African Word

Constructional grammar provides a platform for a unified justification of grammaticalization and lexicalization of words in a language. This includes the account of linguistic changes which have commonalities and features that keep those changes dissimilar. Lexicalization in this paper should be understood within the context of the diachronic process of language change. This paper unpacks the problems that are inherent in theories of language structure which assert on a sharp dichotomy between the lexicon and the syntax as observed in the possessive constructions in African Wordnet. This argument is raised in this paper against the backdrop of the linguistic theories that have progressed in demonstrating human language ability and the lexicon that has become fundamental to those theories. A major part of this paper is devoted to the discussion of the evolution of the possessive compounds in the history of Siswati as one of the languages covered by the African Wordnet project. This is based on the premise that the lexicon must interface with the conceptual system. However, there is not much agreement on which information must be included on which side of the lexical-conceptual boundary and how the conceptual information should be represented.

This paper is concerned with aspects of lexicalization in the history of Siswati (one of the South African languages explored in the African Wordnet) from the perspective of Construction Grammar (CxnG). In this paper, I show how constructional approaches can account for both grammaticalization and lexicalization within a unified framework, basing my argument around the two kinds of input to lexicalization which Brinton & Traugott (2005: 96) identify: syntactic constructions and word formation patterns. Lexicalization is discussed in this paper to indicate paradigmatic relation among words and not just a semantic relation. So, lexical relations discussed in this paper will include phonetic relations, morphological relations and morpho-syntactic relations. Again, a caveat is in order. In this paper, I consider how the CxnG framework can explain the development of form-meaning mismatches, conventionalization, and the loss of internal constituency, in lexicalization. The Siswati data indicate that a constructional approach can account for the two stages of lexicalization in a way that is parallel to the two stages of grammaticalization.

Third language acquisition meets cognitive linguistics.

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Keywords: language acquisition, language learning, third language, reflexive possessive pronouns

The present paper focuses on third and following language (L3/Ln) acquisition, a field of research that has not yet received much attention within the cognitive linguistics paradigm. Taking a usage-based approach, we address cross-linguistic influence between previously acquired languages and L3. The main research question is whether the L1/L2 influence can be traced and to which extent such influence is facilitative. On the methodological plane, the question is whether and how the toolbox of cognitive linguistics can facilitate L3 research.

In order to answer these questions, we carried out a pilot experiment focusing on the acquisition of the reflexive vs. non-reflexive distinction in possessive pronouns in learners of Russian as a foreign language by adults whose first language (L1) was Swedish and second language (L2) is English. This language combination provides an exciting testing ground, since while L1 and L2 are typologically closer related than L1 and L3 or L2 and L3, respectively, the L1 and L3 share a number of properties.

The reflexive/non-reflexive distinction exists in L1 Swedish and L3 Russian possessive pronouns (e.g. Swedish *hans/hennes* 'his/her' vs. *sin* 'his/her own', and Russian *ego/eë* 'his/her' vs. *svoj* 'his/her own' where the former refers to someone else's than the subject in the sentence while the latter is co-referential with the syntactic subject of the sentence), but lacks in L2 English. The L1 Swedish and L2 English group of learners (N=8, mean age 28) was also compared to L1 Russian speakers (N=17, mean age 43) and L2 Russian speakers with L1 lacking the reflexive vs. non-reflexive distinction (N=27, mean age 27), e.g. Italian, thus following the subtractive group design in the experiment (Westergaard et al. forthcoming). Using QuestionPro as a platform, we collected acceptability judgements along a 5-point Likert scale from all three groups of participants. The experiment results suggest that Swedish and English interact in non-trivial ways and affect the acquisition of Ln Russian in L1 Swedish and L2 English learners. The results of the pilot experiment indicate that the presence of the reflexive/non-reflexive distinction in L1 Swedish does not seem to facilitate the acquisition of this distinction in L3 Russian, furthermore, the experimental results suggest non-facilitative influence from L2 English.

It seems fruitful to analyze the category of possessive pronouns in terms of a radial category. In such a radial category, non-reflexive possessive pronouns clearly represent the prototype while reflexive possessives are less prototypical (Taylor 2019). A simple corpus search suggests that in Russian, non-reflexive possessives are at least three times more frequent than their reflexive counterparts. The results of our pilot experiment suggest that the prototype is acquired first and generalized over less prototypical members of the category regardless of the fact that a similar category with a similar structure exists in the L1 of the learner.

The study has clear pedagogical implications, since better understanding of the interactions of previously acquired languages and a new language can improve our foreign language teaching methods.

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Modeling language data and evaluating linguistic analyses with mathematical methods: Implications for construction grammar

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Keywords: construction grammar, affix ordering, complexity measuring, mathematical modeling, language processing

In science, a problem often allows for different solutions. The so-called Big O notation serves for assessment of the complexity of those solutions in mathematics and computer science. The Big O notation tells us how an algorithm slows as data grow. Thus, complexity is not a property of data (as is the case in linguistics) but of analysis. I explain how such an understanding of complexity can be applied to linguistic analyses and evaluate the complexity of a recent approach to affix order, the so-called Complexity-Based Ordering (CBO)**,** Plag (2002), Hay & Plag (2004), Plag & Baayen (2009). CBO elaborates on the Parsability Hypothesis (Hay 2001, 2003) and relies on data from corpora (Hay & Baayen 2002). The approach was originally formulated for English, enjoyed popularity but fails to account for the order of affixes even in languages closely genealogically related to English (Manova 2010, 2015, Zirkel-Hinkelbach 2011, Talamo 2015). I therefore introduce an alternative approach that is based on a mathematical method, Gauss-Jordan elimination, and is simpler than CBO.

Gauss-Jordan elimination serves for solving systems of linear equations numerically ((1) is an example of a system of linear equations), that is, only with the help of elementary operations such as substitution, addition or multiplication.

(1) $2x + y + 2z = 10$
$x + 2y + z = 8$
$3x + y - z = 2$

The goal of Gauss-Jordan is, based only on well-known facts and elementary operations with them, to come to a single option for a variable (the unknown); x, y and z are the variables in (1). If there is only one option for a variable, this option is the variable's value, i.e. the solution to the problem.

With respect to affix order, the well-known information is information about the lexical category specification of an affix, i.e. whether the affix derives nouns (N), adjectives (A) or verbs (V); a single option for a variable means one affix combination of a kind. Thus, I model derivational suffix combinations in terms of bigrams of the type SUFF1–SUFF2, where SUFF1 has three valency positions for further suffixation: $SUFF2_N$, $SUFF2_A$ and $SUFF2_V$. As can be seen from Table 1, this assumption allows data to be distributed so that in most cases there is one option of a kind, see for N (*-ist*$_N$*-dom*$_N$) and for V (*-ist*$_N$*-ize*$_V$).

Table 1: Combinability of the English suffix -ist (data from Aronoff & Fuhrhop 2002, based on OED, CD 1994)

SUFF1	Lexical category of SUFF1	SUFF2 according to lexical category
-ist	N	N: *-dom* (2) A: *-ic* (631), *-y* (5) V: *-ize* (3)

If more than one SUFF2 of the same lexical category is available (see for A in Table 1), one of the SUFF2 suffixes attaches by default, suffix *-ic* in our case: in English, the combination *-ist*$_N$*-ic*$_A$ derives 631 types, while *-ist*$_N$*-y*$_A$ derives only 5 types. Regarding default suffixes, having counted suffix combinations in large dictionaries and corpora for different languages, Manova (2011, 2015), Manova & Talamo (2015) and Manova & Knell (2021) maintain that a default suffix derives more than ten types, while SUFF2 suffixes that compete with the default suffix derive ten or fewer types each.

Finally, I report the results of a psycholinguistic experiment with native and advanced non-native speakers of English and German, and with native speakers of Italian, Spanish, Polish and Slovene. The participants in the experiment did not need semantic cues to process suffix combinability, i.e. they could differentiate between existing and non-existing suffix combinations

presented to them without lexical bases such as roots/stems/words, and the participants were better in recognizing productive than unproductive combinations (Manova & Knell 2021 for English).

All these, taken together, have consequences for our understanding of what a (morphological) construction is (Croft 2001, Goldberg 2006, Booij 2010, Jackendoff & Audring 2020, Hoffmann 2022) as well as of how constructions are stored and accessed in the mental lexicon.

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The effect of Foreign Language Anxiety on listening comprehension Tunisian EFL students as a case study

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Keywords: Foreign Language Anxiety, listening comprehension, EFL students, factors, solutions.

The centrality of listening in language learning and teaching came to light in the mid-1960s and early 1970s (Morely, 2001, p. 70). That is, "the status of listening began to change from one of neglect to one of increasing importance" (Ibid, p. 69). However, only when learning a new language, do the intricacies of listening become apparent. In this context, Vandergrift and Goh (2012) contend that "[FL/L2] listener ability to maximize comprehension efforts can be influenced by a number of affective factors […] [as anxiety] that will thereby influence listening success (p. 70). The present study purports to evaluate the sway of a seven-month intervention on 69 Tunisian EFL students at the Faculty of Letters and Human Sciences of Sfax during their first year of undergraduate English studies, the factors contributing to this type of anxiety, and the potential strategies to cope with it. The mixed methods experimental (or intervention) design represented the design type in this study. The quantitative phase involved the administration of the Likert scale 'Shortened Foreign Language Listening Anxiety Scale' (SFLLAS), designed by Kimura (2017). Applying the pre-experimental design in this study, the researcher "studies a single group and provides an intervention during the experiment" (Creswell, 2014, p. 219). The quantitative collected data were analyzed using Statistical Package for Social Sciences (SPSS, version 20). In this phase, the degrees of FLA in listening among research participants would be measured and compared before and after the trial. An in-depth investigation of the research problem was made by means of two qualitative measures; interviews and observations. The investigator introduced the qualitative phase as before, during, and after the trial to meet the research project goals. Results yielded worthwhile implications for numerous stakeholders, offering valuable teaching strategies to assist Tunisian EFL students in their listening classes.

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Sharing grief through metaphors and neologisms: A study on French narratives of perinatal loss

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Keywords: metaphor, neologisms, hypostatization, perinatal loss, taboo

Losing a baby during or right after pregnancy is a deeply stigmatised experience in Western societies, even though it is sadly more common than one might expect, with an average of about 5 stillbirths for every 1000 births in most European countries.

How can one explain the grief and pain one goes through after perinatal loss to someone who has never lived a similar experience, someone who lacks "experiential knowledge" (Borkman 1976)? Metaphor analysis proves to be a useful tool to understand the mental state and thought process of an individual who goes through a traumatic and emotional experience (Semino *et al.* 2018). Not only do metaphors serve to bridge possible communicative gaps by enabling bereaved parents to share their experience of loss while getting around the taboo and stigma that society puts on perinatal death, metaphors also provide insight into how individuals conceptualise and come to terms with their grief (Littlemore *et al.* 2019).

From a lexical perspective, the culture of denial around perinatal grief (Markin & Zilcha-Mano 2018) translates into the lack of a specific term to designate either bereaved parents or their lost babies (as opposed, e.g., *widow(er)* or *orphan*). In this view, neologisms are, or can be, a powerful means of creating and voicing new concepts by giving them a linguistic label (reification).

This paper presents the methodological framework and the preliminary results of an ongoing research project that analyzes these two aspects of the discourse of perinatal loss. First, we look at the metaphors used by French speaking bereaved parents by investigating a corpus of testimonies in which parents describe their experience. Special relevance is given to the voice of fathers so as to identify the way(s) in which their experiences resemble and/or differ from those of mothers in terms of the metaphors used. Secondly, we will consider the role of neologisms pertaining to perinatal loss, inspired by the existence of such a neologism in (Belgian) Dutch *sterrenkind* lit. 'star child' (officially recognised in 2015) to designate the still born baby. This neologism has recently been productively extended (via clipping of the first element *sterren-*) to new compounds in Belgian Dutch (e.g., *sterrenouder* 'star parent', *sterrensister* 'star sister', *sterrenboom* 'star tree' (as commemorization)). One of the questions that we will consider is to what extent such neologisms not only help break the taboo, but also give substance to the experience as real and thus make it more widely recognised in society. This addresses the "concept-forming power" of words (Leech 1981, see also Schmid 2008), also known as *hypostatisation*, which, in this context, may succeed in reducing the "epistemic injustice" that Fricker (2007) talks about: the absence of a word implies the absence of a unified concept, which makes it extremely difficult for this meaning to enter into, or get accepted in, the larger community.

The impact of the use of metaphor and of hypostatization (the latter through the use of neologisms) will be measured through careful analysis of people's testimonies via interviews and questionnaires.

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The lexical-specific nature of syntax: Hypothetical manner constructions and Filler-Slot Relations

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Keywords: Filler-slot relations, Construction Grammar, Collostructional work, Spanish

The distinction between lexicon and syntax has played an important in linguistic theory. For instance, in the generative approach, lexical expressions are freely inserted under the terminal nodes of syntactic phrase structure trees (Diessel & Hilpert 2016). However, the dichotomy of lexicon vs. syntax and their presumed independence has long been challenged in particular by work in the framework of Construction Grammar (e.g., Goldberg 1995). Such work has proposed that the co-occurrence patterns of lexemes and constructions is functionally motivated; for instance, verbs occur in some construction's slot especially if the verb's function/meaning is compatible with that of the construction (Goldberg 1995:50; Gries & Stefanowitsch 2004:99), which gives rise to a joint distribution of lexemes in constructions that are known in the literature as 'Filler-Slot Relations' (see Diessel 2019: 20). In a usage-based framework, such probabilistic associations constitute part of each language user's individual and ever-changing exemplar-based representation of linguistic knowledge (Beckner et al. 2009), which is why our general understanding of linguistic knowledge but also our particular understanding of specific constructions benefits from the study of such associations between constructional slots and lexemes filling them (Stefanowitsch & Gries 2003).

The present study applies this logic to the analysis of Filler-Slot Relations by exploring Hypothetical Manner Constructions (HMCs) in Mexican Spanish (e.g. *parece como si estuviera borracho* 'it looks as if he were drunk'; Olguín Martínez 2021). Our analysis is based on 1362 instances of six constructional schemas (with NPs as locatives or non-locatives; see Appendix) from The Corpus del Español NOW corpus (News on the Web). While we know that the first slot in such HMCs can be filled by a variety of different verbs (e.g., *sentir* 'to feel', *es* 'it is', *ver* 'to look', *comportar* 'to behave', *actuar* 'to act', *sonar* 'to sound', and *parecer* 'to seem', see Olguín Martínez 2022), much less is known about both the specific association patterns between these constructions and the verbs they take and, more importantly, what such patterns reveal about these constructions' functions (which in turn can inform analyses of their acquisitional paths, and processing).

We applied a revised version of distinctive collexeme analysis (Gries & Stefanowitsch 2004, Gries, to appear) to our concordance data, specifically a newly-developed kind of analysis that adds the equivalent of confidence intervals to the collostructional strengths usually reported, and does that in a way that also helps assess the dispersion of the filler-slot types across the corpus. This is a major improvement of existing work because, while much usage-based work has happily made connections to many aspects of domain-general cognition such as frequency, exposure, learning, and contingency, most collostructional work has narrowly focused on frequency as the main tool of quantification – the present study, however, offers a wider coverage of cognitively relevant notions/mechanisms. It is expected that this revised version of distinctive collexeme analysis will enable us to assess all the dimensions of collostructional attraction or repulsion of HMCs, and other constructions, in a more theoretical/explanatory way.

Appendix. Hypothetical manner constructional schemas in Spanish

(1) como 'like' constructional schema with non-locative NP
_____ como +NP (e.g. se comporta como un doctor
'he acts like a doctor').

(2) como 'like' constructional schema with locative NP
_____ como +LOC.PHR (e.g. se siente como en la playa
'it feels as if we were on the beach').

(3) igual que 'like' constructional schema with non-locative NP
_____ igual que +NP (e.g. se comporta igual que un doctor
'he acts like a doctor').

(4) igual que 'like' constructional schema with locative NP
_____ igual que +LOC.PHR (e.g. se siente igual que en la playa
'it feels as if were on the beach').

(5) como si 'as if' constructional schema with non-locative NP
_____ como si +ser.SUBJ + NP (e.g. se comporta como si fuera un doctor
'he acts as if he were a doctor').

(6) como si 'as if' constructional schema with locative NP
_____ como si +estar.SUBJ + NP (e.g. se siente como si estuvieramos en la playa
'it feels as if we were on the beach').

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Framing deaf people and their problems in public discourse during the campaign for the legal recognition of Argentine Sign Language

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Keywords: Argentine Sign Language, legal recognition, deaf people, frame, conceptual metaphor, political discourse

The national association of deaf people in Argentina (Confederación Argentina de Sordos, CAS) has been advocating for the legal recognition of Argentine Sign Language (Lengua de Señas Argentina, LSA) since 2007. In 2022, a significant milestone was achieved when the LSA bill, which seeks to legally recognize LSA, was passed in the Lower Chamber of the National Congress. However, for the bill to become law, it still needs to be passed in the Upper Chamber, which is expected to occur in 2023. Throughout CAS' LSA campaign, the bill has faced strong resistance from various stakeholders. Over the years, different conceptualizations of deaf people, as well as the problems that the LSA bill aims to address, have been put forward. In this presentation, I will examine the way deaf people and the problem the bill seeks to address are framed in a selection of political messages in public discourses made by deaf and hearing stakeholders in different moments of the LSA campaign. To do so, I will draw upon Lakoff's cognitive understanding of frames (2014), which refers to the fundamental mental structures that shape our perception of the world, and of conceptual metaphors (2006), which refer to cross-domain mappings in which one mental domain is conceptualized in terms of another.

Through an analysis of the linguistic expressions made by stakeholders in selected discourses during the LSA campaign, in which I have been participating, I identify *the deficit frame* and *the minoritized group frame* as the two opposing frames that exist in the conceptualization of deaf people. These are similar, but not equal to the ones described by Bauman and Murray (2009): the hearing loss and the deaf gain frame. Then, concerning the construction of the problem that the LSA bill aims to address, I observe two main problems constructed through different spatial metaphors. On the one hand, the deficit frame highlights *the inclusion problem*, which relies in the metaphors SOCIETY IS A CONTAINER and INCLUSION IS MOVEMENT OF AN ENTITY FROM AN OUTER LOCATION TO A LOCATION WITHIN THE CONTAINER. The linguistic expressions used within the inclusion problem conceptualize deaf people as occupying an outer location because they are seen as lacking something (e.g., hearing or communication skills), while hearing people occupy an inner location within the container. The act of inclusion, or movement from the outer to the inner location, is initiated by hearing people and institutions, who are viewed as the agents of inclusion. Deaf people, on the contrary, are portrayed as the entity that needs to be moved, and, thus, are positioned as patients or beneficiaries. On the other hand, the minoritized group frame emphasizes *the inequality problem*, which centers on the asymmetry of power relations between dominant and subordinated group(s)/language(s). The construction of this problem is based on several spatial metaphors, as described by Massone & Martínez (2013). There are metaphors in the vertical scale, such as POWER IS UP, in which hearing people, institutions, and the government are positioned in upper locations, while deaf people and their groups are positioned in lower locations. In addition, there are metaphors in the horizontal scale, such as GROUPS OF PEOPLE ARE CONTAINERS OF DIFFERENT SIZE ACCORDING TO THE POWER RELATION AMONG THEM. In the latter, deaf people and their communities/groups are conceptualized as small containers with more or less porous boundaries in relation to larger, more powerful containers. I argue that the difficulty in passing the LSA bill and the resistance faced can be attributed to these two opposing frames, which result in vastly different constructions of the problem and the actors involved.

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Perspective in Argentine Sign Language narratives

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Keywords: Perspective, Argentine Sign Language, narratives, Cognitive Linguistics, placing and pointing constructions, body posture, body orientation, eye gaze

This presentation aims to analyze the strategies employed by deaf Argentine Sign Language (LSA) signers to conceptualize perspectives in LSA narratives, using a cognitive linguistic framework. Although there is a considerable amount of literature on this topic for signed, written, and spoken languages, as well as co-speech gestures, there has been no research conducted on LSA. According to Langacker (2008), perspective is a viewing arrangement that captures the overall relationship between the "viewers" and the situation being "viewed." Cognitive perspective starts with bodily viewpoint within a real physical Ground of experience (Dancygier & Sweetser 2012). In signed languages, the physical Ground is always present as they construct meaning through the signer's body and space. Signers use different physically visible articulators in space to construct one or more perspectives sequentially or simultaneously (Engberg-Pedersen 2015).

I analyzed a selection of LSA narratives produced by adult deaf LSA signers and transcribed them using ELAN, including glosses with information on the strategies used to create and recruit reference, such as placing and pointing constructions (Martínez & Wilcox 2019; Wilcox & Martínez 2020; Wilcox & Occhino 2016). I also described the actions taken by other articulators, such as body posture, body orientation, and eye gaze, which have been shown to play a key role in other signed languages (Engberg-Pedersen 2015). Finally, I coded the perspective(s) used throughout each narrative and consulted with a deaf LSA signer who is part of our research team to ensure that the coding accurately represents the perspective(s) used from the point of view of deaf LSA signers.

Our analysis revealed that, as in other signed languages, LSA uses three types of perspective: observer perspective, character perspective, and mixed perspective. LSA signers employ various articulators to establish a relation between what is being "viewed" and the "viewers." The body of the signer serves as the reference point from which other entities are described, narrated, and understood. Body orientation and eye gaze construct the links between the chosen perspective(s) and other meaningful locations (called Places), where other referents are created and recruited.

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A corpus-based study of the linguistic representation of change-of-state events in Japanese: An examination of the parallelism between motion and change

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Keywords: chage of state, motion, corpus

In this presentation we will discuss the question of the parallelism between the linguistic representations of motion (e.g., going out) and change of state (e.g., dying, becoming happy) (Gruber 1965, Jackendoff 1983, Goldberg 1995, Talmy 2000, Iwata 2010, Ito 2018). Talmy (2000), for example, claims that his typology of event integration applies to the descriptions of motion events and change-of-state events: e.g., verb-framed languages for motion also encode a change in the main verb. However, in comparison to motion, fewer quantitative studies have been done as to how often languages use the main verb and other positions to describe changes.

We present our corpus study of how the Japanese language describes 12 different changes of state to understand the linguistic representation of the change-of-state events in this language. The changes examined are SITTING DOWN (posture), DYING (life), WAKING UP (brain state), BECOMING HAPPY (emotion), BECOMING BIGGER (size), BECOMING RED (color), OPENING (space-based states), BREAKING (integrity), FREEZING (phase of matter), BECOMING HOTTER (temperature), BECOMING CLEAN (cleanness), BECOMING BETTER (evaluation), and the causative counterparts of these changes. For these changes of state, we searched the Book subcorpora of the Balanced Corpus of Contemporary Written Japanese (BCCWJ) for a broad range of expressions representing them, including a) change-of-state verbs (e.g., 'die'), b) resultative constructions (e.g., '(paint) ... red'), c) general change verbs and their complement (e.g., 'become bigger), and d) expressions involving nominals representing a state or a state-inducing entity (e.g., 'remove dirtiness'), etc. We examined the coding positions of two components of a change 1) transition (comparable to TO) and 2) resulting state (comparable to GOAL GROUND).

Our findings show that the predominant position for indicating a change in Japanese is the main verb, accounting for an average of 68.0% of the descriptions of 12 changes. However, the change-coding positions vary considerably according to particular changes of state: Unlike changes such as OPENING and DYING, which are almost always coded in the main verb, changes such as BECOMING CLEAN and BECOMING RED are most often indicated by a general change verb (indicating transition) and its complement (indicating a resulting state). Further findings include the variation in the change-coding position depending on the presence of "a coevent" (cause of change or means of its causation) in the same clause. The omission of a coevent leads to the more frequent use of the main verb position for certain changes.

Those tendencies are compared with the patterns of the motion-event description in Japanese (Matsumoto 2017, 2018, Koga to appear). The use of the main verb position is indeed common for both motion and change of state, but the tendency is clearer in the case of the latter. Sources of this difference are 1) the poverty of the lexical inventory for adjectives describing certain states, 2) the absence of the equivalent of deixis in changes of state, and 3) the stronger tendency to omit a coevent in change descriptions.

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Fluidity in Japanese Emotion Metaphors: A Corpus Study.

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Keywords: emotion metaphor, fluidity, collocation, corpus study

The issue of universality and cross-linguistic variability of emotion metaphors is one of the most controversial topics in cognitive linguistics. Interestingly, the Japanese language has frequent occurrences of emotion metaphors based on the concept of FLUID (Matsunaka & Shinohara 2001; Shinohara & Matsunaka 2001), which seem to be less frequent in English. The present study explores how fluidity serves as the source domain of emotion metaphors in Japanese.

For corpus analysis, the Balanced Corpus of Contemporary Written Japanese (hereafter BCCWJ), an authentic Japanese corpus published by the National Institute for Japanese Language and Linguistics, was searched. Eight verbs that require the grammatical subject to be fluid and imply some kind of motion (*nagareru* 'flow'*, afureru* 'overflow,' *waku* 'well up,' *moreru* 'leak,' *nijimu* 'ooze,' *tareru* 'drip,' *shimiru* 'permeate,' *shitataru* 'trickle) were used. First, it was determined whether four Japanese nouns that appear in authentic dictionaries (see references) as the meaning of 'emotion' (*kanjou*, *kimochi*, *kibun, kokoromochi*) cooccur with the eight fluid verbs. All of these nouns cooccured with one or more fluid verbs, showing that emotion in general can be conceptualized as fluid in Japanese.

Next, the collocation patterns of the eight verbs were tested with 25 Japanese nouns, each of which means a specific emotion type (e.g., *ikari* 'anger,' *kanashimi* 'sadness,' *yorokobi* 'joy'). The 25 nouns were selected in the following procedure: (1) 58 English nouns of emotions were gathered from literature (Ekman 1994, 2003; Kövecses 2000; Plutchik 1980); (2) for each of them, up to five corresponding Japanese nouns were listed using four English-Japanese dictionaries (see references), resulting in 127 candidates for Japanese nouns of emotion; and (3) among them, the 25 most frequent nouns were selected based on BCCWJ search. For the 25 nouns and eight verbs, tokens of collocation were counted.

The following results were obtained through an analysis of the 8x25 collocation matrix. First, *waku* and *afureru* had the highest cooccurrences with the emotion nouns, including more types of emotions than other verbs. The nouns that most frequently cooccurred with *waku* were *kyoumi* 'interest' and *kibou* 'hope,' those which most frequently cooccurred with *afureru* were *yorokobi* 'joy' and *ai* 'love.' Second, emotion types with abrupt onset such as *odoroki* 'surprise' did not cooccur with fluid verbs, suggesting that fluid verbs may depict continuous features of emotions. The analysis of the meanings of these verbs showed that their spatiotemporal aspects could be profiled according to Croft's (2012) two-dimensional representations of events (Figure 1, 2). These spatiotemporal profiles of verbs may be mapped onto the emotion type with which they cooccur, focusing on relevant features of the emotion. Moreover, metaphorical analysis suggests that *afureru* instantiates EMOTION IS SUBSTANCE IN THE CONTAINER and MORE IS UP, while *waku* may instantiate EMOTION IS A NATURAL PHENOMENON, which is frequently seen in Japanese.

In conclusion, the present study provides new insights into emotion metaphors. The results are consistent with previous arguments that the Japanese culture has a wide range of fluid-based conceptualization of language, thought, and communication (Nomura 1996, 2002).

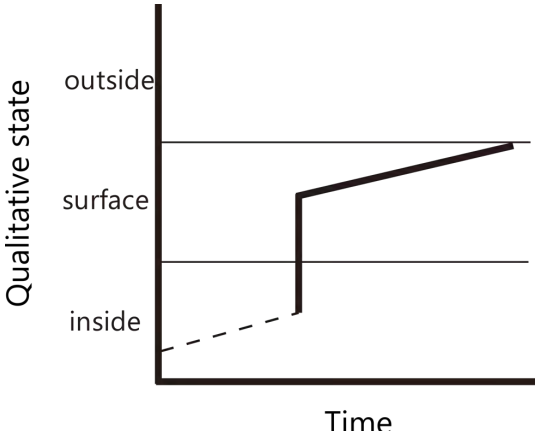

Fig. 1: The two-dimensional representation of 'waku.'

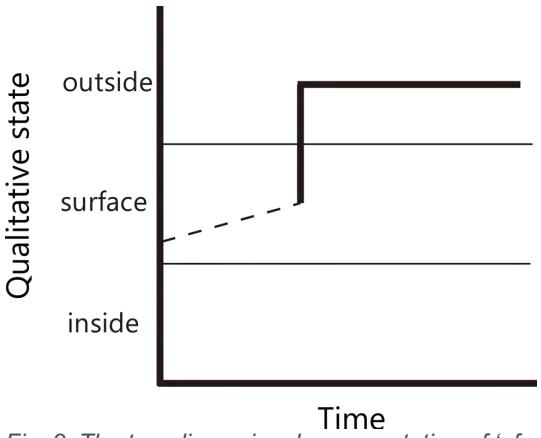

Fig. 2: The two-dimensional representation of 'afureru.'

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Pause Length Predicts Cognitive State Attribution in Native and Non-Native Speakers

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Keywords: speech pauses, cognitive state attribution, non-native speakers

Speech pauses between turns of conversations are crucial for assessing conversation partners' cognitive states, such as their knowledge, confidence and willingness to grant requests (Fox Tree 2002; Brennan & Williams 1995): in general, speakers making longer pauses are regarded as less apt and willing (e.g. Roberts & Francis 2013). However, it is unclear if the interpretation of pause length is mediated by the accent of interactants, in particular native versus non-native accents (for research on inter-turn pauses in non-native speech see Peltonen 2017; Van Os et al. 2020).

We hypothesized that native listeners would be more tolerant towards long pauses made by non-native speakers than those made by native speakers. This is because, in non-native speakers, long pauses might be the result of prolonged cognitive processing when planning an answer in a non-native language (e.g. Cenoz 2000; Guyer et al. 2019) rather than of a lack of knowledge, confidence or willingness.

To test this hypothesis, we conducted an online experiment, in which 100 native Polish-speaking raters listened to short staged conversations, during which a speaker asked questions or made requests that were answered or granted by either native speakers of Polish or native Chinese-speaking non-native speakers of Polish. The pauses before the answers were manipulated to be either short (200 ms) or long (1200 ms; cf. Roberts & Francis 2013, Dingemanse & Liesenfeld 2022). After listening, the raters rated each respondent on their knowledge, confidence and willingness.

We found that our hypothesis was confirmed for perceived willingness only: non-native speakers were regarded as equally willing to grant requests, irrespective of their inter-turn pause durations, whereas native speakers making long pauses were regarded as less willing than those making short pauses (see 95 % confidence intervals in Fig. 1). For knowledge and confidence, we did not find a mediating effect of accent: both native and non-native speakers were rated as less knowledgeable and confident when making long pauses (see 95 % confidence intervals in Fig. 1). In addition, in line with previous research (cf. Lev-Ari & Keysar 2010), non-native speakers were found to be regarded as less knowledgeable and confident than native speakers.

One possible reason for the difference between our findings on perceived willingness to grant requests versus perceived knowledge and confidence is that requests might be more socially engaging and more directly relevant for interpersonal cooperative interactions than knowledge that reflects on partners' competence but not cooperativeness.

Overall, our study shows that (non-)native accents can influence which cognitive states are signaled by different pause durations, which may have important implications for intercultural communication settings where topics are negotiated between native and non-native speakers.

Previous research has shown that different pause lengths do influence judgments in a number of languages, such as English, Italian, and Japanese (e.g. Roberts et al. 2011). However, results on the evaluation of pause lengths in responses by non-native speakers so far only exist for Polish. For this reason, we will also present preliminary results of a follow-up study, in which we explore if our findings hold across languages and accents.

Figure 1: Ratings of the perceived knowledge and confidence of speakers answering knowledge questions, and of the perceived willingness of speakers to comply with requests. Answers were given either by native or non-native speakers and were preceded by either a short (200 ms) or long (1200 ms) pause. Ratings range from 0 (not knowledgeable/confident/willing at all) to 100 (very knowledgeable/confident/willing). Points and whiskers represent mean values and 95% confidence intervals of participants' responses. Non-overlapping confidence intervals indicate significant differences between the groups.

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Linguistic preference outcompetes alignment as a predictor for assessing others' cooperativeness

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Keywords: alignment, cooperation, linguistic similarity, syntax

An important quality to assess in others is their cooperativeness. Since linguistic communication requires a high degree of cooperation between interaction partners (Fitch 2010, Grice 1975, Knight 2016), people may use linguistic markers in their partners' speech as an indicator of their cooperativeness in other tasks (Roberts 2013). Further, linguistic markers can be used to asses others' in-group membership, and we tend to trust and cooperate with in-group members more than with out-group members (Balliet 2014, Evans 2009). But what exactly are the characteristics of language that may be important to assess others' cooperativeness?

We hypothesize that people are more likely to cooperate with individuals that align with them linguistically, i.e. share lexical or syntactic choices (Pickering & Garrod 2004). Such correlations have already been observed with respect to task success (Reitter & Moore 2014), and we expect that the same positive relationship exists between language and cooperation.

To test this, we conducted an online experiment with 100 native English-speaking participants. First, we determined the participants' preferred syntactic construction for describing a ditransitive event (to-dative vs. double-object construction). Then, each participant communicated with two other interaction partners (who were in fact standardized chatbots) in a picture-naming task (Bock 1986), in which the participants and the bots took turns describing pictures that represented ditransitive events. One bot aligned its language use to the syntactic constructions used by the participants, and the other one didn't. Crucially, when describing the pictures, half of the participants were forced to use their previously determined preferred syntactic construction, whereas, as a control, the other half was forced to use their dispreferred construction. This means that for half of the participants, the aligning bot accommodated to the participants' preferred construction and for the other half, the aligning bot accommodated to the participants' dispreferred construction. After each communicative interaction, participants decided in a two-alternative forced choice task with which of the two partners they would like to play a cooperation game that determined the financial bonus that they would receive for participation. The participants' choices in this task were our main variable of interest. We predicted that linguistically aligning communication partners would be preferred as cooperation partners over non-aligning ones.

Our results confirmed this prediction only partially: aligning partners were only chosen significantly above chance (mean 77.0% ± 95% confidence interval 8.0%) when participants could use their preferred constructions but significantly below chance (mean 40.7% ± 95% confidence interval 9.1%) when they were forced to used their dispreferred constructions. This indicates that participants' natural linguistic preference was a more important predictor of partner choice than alignment.

Thus, in natural conversations, where people usually use their preferred constructions, alignment is expected to positively influence perceived cooperativeness. However, the reason for this effect is most likely not that people value the cognitive effort that others make to align with them but rather that people use linguistic similarity as an indicator of in-group membership. This has important implications for communications in intercultural settings where in- and out-group members negotiate cooperative actions.

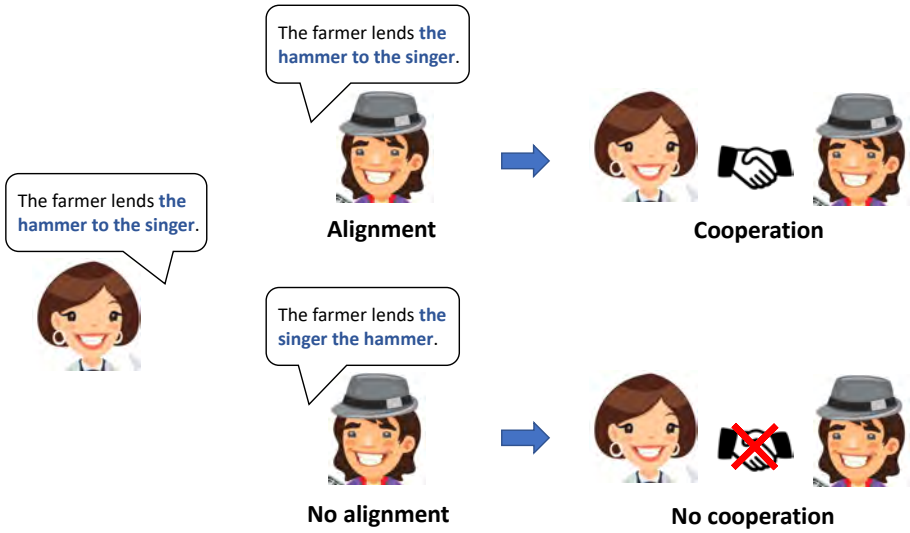

Figure 1. Experimental design and predictions. The predictions were only confirmed for those participants that could communicate using their naturally preferred constructions but not for those participants that were forced to communicate using their dispreferred constructions.

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The synchronic motivation of idioms: An empirical study

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Keywords: Idiom, Synchronic motivation, Conceptualization, Native speaker-based approach

This contribution aims at empirically analyzing the synchronic motivation of French idioms (such as fr. *casser sa pipe* 'to die'). By adopting a native speaker-based approach, this empirical study will investigate the plurality of motivational processes involved in idioms' motivation, as well as the potential factors limiting and/or contributing to idioms' motivation.

The synchronic motivation of idioms is traditionally described as a cognitive phenomenon based on the cognitive links between idioms' compositional and idiomatic meanings (Dobrovol'skij & Piirainen 2005: 87). Although idioms are considered part of the lexicon (Mejri 1997), the criteria on which phraseological motivation relies differ from those determining the motivation of lexical units in general. According to Koch's definition of lexical motivation (2001: 1156), two lexical units are motivated if there is a formal relation between their forms and a cognitive relation between the concepts designated by their forms. Contrary to idioms' motivation, which is solely based on the cognitive links between idioms' compositional and idiomatic meanings, lexical motivation can manifest itself in different ways: Extrinsic motivation, that is the possibility to motivate a lexical unit (for ex. fr. *manuel*) via a formally different lexical unit (fr. *main*) (Marzo 2013: 148), and polysemy-based motivation, which occurs when a lexical unit (for ex. eng. *mouse* 'computer device') is motivated via a formally identical lexical unit (eng. *mouse* 'small rodent') (Marzo 2008: 174). Due to the limited amount of empirical studies within the field of idioms' motivation (such as Gibbs & O'Brien 1990), it is not clear whether extrinsic motivation and polysemy-based motivation only concern simple and complex words, or, on the contrary, these motivational processes participate in the motivation of idioms too.

Our questionnaire study conducted with French native speakers will fill this gap by investigating the synchronic motivation of two groups of French idioms: Non-polysemous idioms and polysemous idioms, i.e. idioms having two or more idiomatic meanings (Moon 1998: 187). The questionnaire's structure is based on the *Tübingen Two-Step Method* (Marzo 2013: 96-101), which proved to be the most valid tool to empirically study idioms' motivation among those that we previously tested. This method is characterized by its division into two steps: The first step identifies a specific motivational process for each stimulus (see Fig. 1) and the second step requires participant to explain idioms' motivation in their own words by means of open questions. A potential answer for the motivation of fr. *Vieux loup de mer* 'old and experienced sailor' (Option 1, "The indicated meaning is based on the meaning of the words forming the expression") collected through our pretest is as follows:

> Le loup est un animal intelligent, fonctionnant avec des règles très précises. Il est souvent considéré comme le roi de la forêt, c'est son territoire. L'environnement de la forêt est ainsi remplacé par celui de la mer.

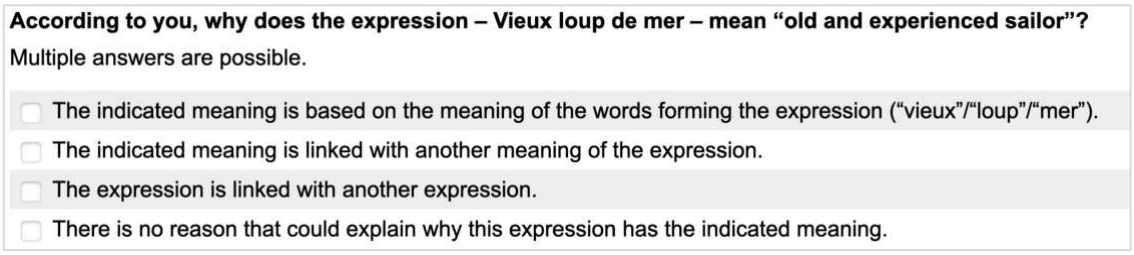

Fig. 1: Example for step 1 with the stimulus fr. Vieux loup de mer *'old and experienced sailor' (translated into English).*

Our data will provide a more complete insight on the functioning of idioms' motivation. In particular, they will shed light on the potential factors influencing the motivation of idioms (for ex. subjective familiarity and number of lexical components) and the types of motivational processes employed by native speakers.

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The Interrelationship Background Knowledge/Input:

A Case Study.

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Keywords: Background knowledge, Bransford and Johnson 1972 washing clothes paragraph, knowledge retrieval, main schema, mother tongue, script.

The current study is experimental, cognitive, and descriptive. It aims to investigate the ability of twenty-two participants to retrieve background knowledge and use it in the right moment to activate appropriate scripts to understand the Tamazight translated version of Bransford and Johnson 1972 Washing Clothes Paragraph. It is necessary to mention that these participants are first exposed to the original paragraph of Bransford and Johnson (1972), followed by its Arabic translated version, and then its French translated version. However, they were not able to understand any of them or recall any information given in the paragraphs. They were, then, exposed to the Tamazight version (Tamazight is the participants' mother tongue). The degree of their understanding is examined by a small test. The main theory used is schema theory. Terminologies advanced by Schank and Abelson (1977), and Schank's Dynamic Memory (1982), are used in the analysis. The selection of participants was based on their scientific background (third year high school students: experimental sciences branch). The study's significance lies in the fact that it added the perspective of recreating the main schema "scene" i.e. title of the text, in a new way. It also puts forth the fact that even if the language of the input is the L1 of the participants, it does not mean that deciphering it would happen for all participants. These individuals are asked to undertake three tasks within the test. The first one is to give a title to the paragraph, and by doing so, they are referring to the main scene. The second task is to extract the words or expressions that led them into choosing the title i.e. they are going to indicate the scripts which were activated and helped them to deduce the main scene. The last task is to summarize the paragraph which would answer the second research question of the current study. With that said, the investigation aims to answer the following questions: do participants need to activate all scripts to generate the main schema "scene"? Can participants write a summary of the paragraph even if they did not generate the main schema? Results show that not all scripts need to be activated to generate the main scene. In fact, only ten participants have been able to deduce the overall schema "scene" projected by the text. Moreover, the number of activated scripts differ from one participant to another. Furthermore, activating many scripts does not necessarily mean that the participant will generate the overall schema, but connecting them with each other, and relating them to the background knowledge properly and in the right time, will. Participants that had no idea about what the main schema was; were able to use the scripts to write down a summary of the paragraph. Nevertheless, the summaries were not complete and did not contain all the information needed. This highlights the fact that the partial activation of scripts may lead to lack of comprehension, which means that the instantiation of some scripts is more important than others. This study can be beneficial to teaching in first place, as it would provide teachers and students with a direct way of comprehending a text. Teachers need to direct student by giving them appropriate hints at the appropriate time and students need to learn to use their background knowledge and connect it to the input in an efficient way. Within a wider scope, the same terminologies used in this study may be used as tools in cognitive literary analyses.

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Multimodal Metaphorical Humor in Facebook Phd Memes.

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Keywords: Humor, metaphor, relevance, memes

Duality (Kyratzis,2003) is the common ground between metaphor and humor, as they both involve two different scenarios, which refers to what Koestler (1964) considers as bisociation of ideas. The present paper seeks to elucidate the relationship between metaphor and humor, in order to better understand the different cognitive processes in use, contributing to humor in memes, which are known as the minimum cultural unit capable of replication (Shifman, 2014). More specifically, the central research question in this study is "when does a metaphor have a humorous effect? The paper also attempts to answer the following questions: a) How do PhD memes use metaphor for humorous purposes?

b) What are the cognitive processes involved in the creation of humor in this multimodal discourse?

c) What is the relationship between the image ,the text, and humor?

To reach this end, Conceptual Blending (Fauconnier and Turner, 2002) is considered in reference to three approaches to humor namely, Koestler's 1964 The Act of Creation, the Incongruity-resolution Model (Suls, 1972), and Relevance Theory (Sperber & Wilson, 1995), together with (Yus, 2003) Humor and the search for relevance. Put differently, the present research merges linguistic theories of humor and cognitive theories of metaphor and blending in order to address how they can enrich and benefit from each other. Shared on social media (namely Facebook), a corpus of twenty multimodal PhD memes, are examined. Preliminary results indicate that metaphorical blends in PhD memes become jokes. Additionally, both linguistic and visual metaphors contribute to the creation of humor, since the incongruity results from the interaction of the text and the image. The analysis of metaphorical blends has aimed to contribute to research on the complementarity and interdependency between the linguistic and visual humor in the construction of PhD memes. A comprehensive discussion of the examples aims at demonstrating the integration of incongruity blending and relevance models to analyze PhD memes. Furthermore, the study attempts to explain the relationship between metaphor and humor in this multimodal ensemble. The paper will be of particular interest to students and scholars in cognitive linguistics, multimodal pragmatics, humor, and memes.

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Common Sense Knowledge graph generation for information-gap requests in dialogue systems

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[l]Logogramma S.r.l.

In this study, we propose a methodology to represent Common Sense Knowledge and its application for conversational purposes. Common Sense is defined as "[...] a tremendous amount and variety of knowledge of default assumptions about the world, which is shared by (possibly a group of) people and seems so fundamental and obvious that it usually does not explicitly appear in people's communications" [Zang et al., 2013, p. 690]. Three aspects of this definition appear to be important for our purposes: i) sharedness, ii) implicitness, iii) communication. These aspects are important in this work as they will guide our conversational agent capable to inferring implicit shared information to process and generate appropriate clarification requests in an incomplete dialogue state, i.e., when relevant arguments of an utterance (mandatory slots) are not filled. This way, the system will be able to pose an appropriate question, such as "Who directed this movie?", by conversely avoiding *obvious* questions like "Did someone directed this movie?".

To represent Common Sense, many scholars adopted a graph-based methodology [Zhang et al., 2019, Ilievski et al., 2021, Chang et al., 2021]. In this work, we propose a formal computational procedure to extract this knowledge from graphs databases. We start from the assumption that the accumulation and systematic use of information in our mentalised knowledge allows us to create what we call Common Sense. Similarly, considering a generic knowledge graph, we can extract more basic systematic informative structures forming a sub-graph that represents the Common Sense. For our purpose, we implemented a methodology for Common Sense relationship extractions using the Neo4J framework [Webber, 2012]. Through the use of the Cypher Query language [Francis et al., 2018], we implemented a domain-independent query (Listing 1) to gather information from the JASON movie database [Origlia et al., 2022]. This preliminary query extracts the most systematic relationships between specific types of nodes, starting from their frequency. This can be applied to any kind of domain-specific graph to understand the Common Sense basic concepts.

```
MATCH (j:JASONSUBSET)-[r]->(j2:JASONSUBSET)
WITH  j2, labels(j) as label, labels(j2) as labels2, apoc.coll.sort(collect(distinct type(r))
    ) as relations
RETURN apoc.coll.subtract(label, ["CCG", "JASONSUBSET"]) as labels, relations, apoc.coll.
    subtract(labels2, [j2.primaryName, "CCG", "JASONSUBSET"]) as labels2, count(relations) as
     relationCount
ORDER BY relationCountDESC
```

Listing 1: Common Sense Exatraction from a Knowledge Base

Results show that the ontological relationship PART_OF is the most frequent one, connecting 51894 nodes of PERSON and MOVIE types (Table 1). Its domain-specific translations, in order of specificity, are KNOWN_FOR, WORKED_IN, WROTE, and DIRECTED. This information represents the implicit knowledge leading the communicative interaction between the system and the user.

As far as the linguistic realisation of Common Sense knowledge is concerned, a useful approach is provided in cognitive linguistics, i.e., Frame semantics [Fillmore et al., 1976] and FrameNet [Baker et al., 1998]. For instance, the frame **Behind_the_scene** describes the work (i.e., film, play, or similar) produced by an artist. An example of a sentence evoking this type of frame can be labelled as follows:

Node A	Relationship	Node B	Freq
[PERSON]	[DIRECTED,KNOWN_FOR,PART_OF,WORKED_IN,WROTE]	[MOVIE]	51894
[AWARDINSTANCE]	[AWARDED_FOR]	[MOVIE]	3267
[AWARDINSTANCE]	[AWARDED_TO]	[PERSON]	3058
[MOVIE]	[HAS_GENRE,PART_OF]	[GENRE]	2214
[PERSON]	[KNOWN_FOR,PART_OF,WORKED_IN]	[MOVIE]	1269
[AWARDINSTANCE]	[IS_A]	[AWARD]	1112
[PERSON]	[DIRECTED,PART_OF,WORKED_IN,WROTE]	[MOVIE]	871
[PERSON]	[PART_OF,WORKED_IN]	[MOVIE]	326
[PERSON]	[DIRECTED,KNOWN_FOR,PART_OF,REVIEWED,WORKED_IN,WROTE]	[MOVIE]	112

Table 1: Most frequent Common Sense relationships extracted; occurrences less than 100 were left out.

$$Scorsese^{Artist}\ \textbf{\textit{is DIRECTING}}^{LU}\ The\ Goodfellas^{Production}$$

Whereas the specific knowledge entailed in this sentence, namely the fact that Scorsese directed The Goodfellas, represents a piece of information which is grounded or eligible to be part of the Common Ground [Clark, 1996], the type of relation between the uttered concepts and the type of concepts themselves represent what is defined as Common Sense [Cambria et al., 2009]. The application of FrameNet and graph databases will be integrated in our dialogue system to compensate for information gaps emerging in conversation among users and a conversational agent and the consequent generation of appropriate questions. The advantage of such a linguistic application of Common Sense, can lead to a deeper understanding of Common Sense Knowledge to manage innovative conversational agents.

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Speech Framing Verbs in Spoken Language Complicate Crosslinguistic Findings

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Keywords: speech framing verbs; English; Spanish; quantitative corpus linguistics; comparative linguistics

Semantic variation in the domain of Speech Framing Verbs has mostly focused on their likeness to motion verbs, hypothesizing that (a) languages might differ in whether the speech act or the manner is lexicalized, leading to (b) differences in lexical richness. Martínez Vázquez (2005) concludes that the use of single verbs of saying with a manner element (i.e., *shriek*) is more frequent in English than in Spanish, where constructions combining two verbs (i.e., *decir* estridentemente 'say stridently') are preferred. On the other hand, Caballero & Paradis (2017) found that Spanish features much greater variety of verbs of saying with other meanings included, making use of more verbs of Activity, Perception, Cognition, and Emotion to frame speech.

Despite the diverse findings, what these studies share is their focus on literary data. Since (especially literary) written language is very different from spontaneous spoken language (O'Donnel, 1974; Tannen, 1982; Chafe & Tannen, 1987), making typological distinctions based on observations from literary corpora might not only misrepresent the variation, but also rule out large portions of the world's languages given that not all languages of the world have a rich literary tradition. Thus, in our mixed qualitative and quantitative study we look at speech framing verbs with a clausal direct object in English and Spanish (following as closely as possible the set-up in Caballero & Paradis 2017), using two corpora of spontaneous spoken language (Call-Home and Call-Friend) as comparable corpora to see if findings based on literary texts are replicated in the more basic genre of spontaneous spoken language.

The picture that emerges is, unsurprisingly, one of much less lexical variation for each language than in literary texts: basic speech framing verbs *say* and *tell* (English) and *decir* (Spanish) dominate the expressions to a much greater extent than in written language, thus confirming differences between the two genres (e.g., literary writing vs. spontaneous speech) as found in the abovementioned studies. In our talk, we explore whether other findings based on literary data hold (lexical variation, adverbial modification). Our preliminary findings show that some previously observed differences still seem to hold (e.g., the lexical richness being greater in Spanish than in English), whereas other are neutralized (e.g., the prevalence of manner adverbials is similarly low across the two languages). With a more modest set of reliable differences between the languages, we then inquire into further dimensions of functional differences between speech framing verbs in the two languages by exploring how tense, aspect, mood and modality, as well as the grammatical person and the presence of subjects and indirect objects modulate aspects of lexical richness. This inquiry leads to interesting modulations of some of the basic findings: for instance, while the differences in lexical richness between the languages seem to hold in the simple past tense (reflecting instances of narrative use), they are neutralized in the present tense (reflecting various usage or linguistic activity types, cf. Levinson 1979).

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Recipient passives in Mozambican Portuguese: A case of constructional alternation in the making

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Keywords: Mozambican Portuguese; Recipient passives; constructionalization; alternation; language contact

As a pluricentric language, Portuguese counts several emerging varieties that are still in the process of formation, especially on the African continent. Due to extensive and contemporaneous contact with Bantu languages (among which, e.g., Changana), the variety of Portuguese spoken in Mozambique displays a wide variety of contact-induced innovations at various levels of linguistic organisation (Gonçalves 2010; Firmino 2021; Nhatuve 2022). Some of these changes, however, are already better established than others. This appears to be the case of the Recipient passive, a construction unique to Mozambican Portuguese (MP). With ditransitive verbs, MP allows for the participant with the thematic role of Recipient (usually coded as Indirect Object) to be promoted to Subject position in the passive voice (see (1) below), an option that is precluded in other varieties of Portuguese. This Recipient passive innovation occurs in alternation with the "standard" Theme passive construction (2) in which the Theme/Direct Object features as Subject (Nhatuve & Mavota 2021). Recipient passives thus show signs of *constructionalization* (Traugott & Trousdale 2014) since they are productive (they are found with more than 50 different verbs) and display some degrees of schematicity (semantic extension from prototypical transfer to transfer as a "social interaction" (Langacker 2008: 394)).

(1) *Pode-se dizer que Moçambique é fornecido a sua própria corrente eléctrica por um país vizinho*. (Corpus do Português)
'It can be said that Mozambique is provided its very own electrical power by a neighbouring country.'
(2) *Rooyen explicou que o óleo será fornecido a Petromoc*. (Corpus do Português)
'Rooyen explained that the oil would be supplied to Petromoc.'

Although Recipient passives emerged due to language contact and structural convergence with the contact languages, they also turn out to be sensitive to language-specific constraints, so that the receiving language (i.e., MP) also plays a part in shaping the variation. In short, Recipient passives do not occur at random in MP but their use is shaped by a set of both language-external and language-internal enabling and hindering factors. On the basis of this emerging constructional alternation, and after having circumscribed the variable context as accurately as possible, the present study aims to unravel the multifactorial nature of the choice between Recipient and Theme passives and identify which enabling factors work as the best predictors of the alternation, by means of statistical modelling, using more specifically logistic regression and conditional inference trees. In particular, we would like to show that, beyond the undeniable effect of language contact, variation is motivated by semantics.

To achieve this goal, we relied on the *Corpus do Português – Web/Dialects* (Davies 2016), composed of authentic written data retrieved from Mozambican blogs and websites, from which we extracted all occurrences of ditransitive passive sentences (both standard Theme passive and non-standard Recipient passives), constituting a database of about 1,000 occurrences annotated according to relevant syntactic, semantic, pragmatic and social factors. While some of them are typically those mentioned in the literature such as definiteness and animacy of the Recipient, pronominality (Bresnan *et al*. 2007; Szmrecsanyi 2016), register and genre, others such as construal and (discursive) accessibility are a relatively novel contribution (see Soares da Silva *et al*. 2021 for an operationalization of construal). Our approach is innovative since it focuses on an alternation at the level of the passive voice and brings more semantics into the statistical modelling. Moreover, it seeks to apply newly developed methodological tools to a language (and more specifically a non-dominant variety of it) that is still underrepresented in this area of linguistics, and by doing so, to shed more light on an ongoing process of constructional change that is typical of Mozambican Portuguese and appears furthermore to be unique among Romance languages.

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Common Ground updates do not depend on how information is conveyed: a recognition memory study

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Keywords: Presupposition accommodation, common ground, assertion, implicature, conventional implicature

Assertions, implicatures and conventional implicatures typically convey new information, whereas presuppositions reference given content; but any content can be syntactically asserted, implicated or presupposed. It is unclear whether asserting versus presupposing new content affects how this content is integrated within hearer representations of the common ground (DiPaola & Domaneschi. 2017, Schwarz, 2017). In three experiments, we compare common ground updates using recognition memory for targets presented in a short story, in one of five forms: asserted (*There were clothes on the seat),* conventionally implicated (*The back seat, which had clothes in it*), implicated *(It's a bad idea to stuff your back seat with clothes*), strongly presupposed (*The bundle of clothes in the back seat*) or weakly presupposed (*She wouldn't stuff her back seat with clothes again).* We find similar recognition rates across forms. This result is surprising given classic models of presupposition and of the common ground (Stalnaker. 2002). Furthermore, we include a control form conveying propositional content with similar wording to ensure that recognition is not due to lexical priming. Finally, we also checked whether similar recognition for asserted, presupposed or implicated form could be due to participants remembering the verbatim form of the presupposed sentences and accommodating them at the recognition test, as suggested by fuzzy-trace theory (Brainerd & Reyna. 1998). However, Experiment 3 showed verbatim recognition to be low and similar across forms. Our results therefore provide strong indication that despite processing differences between assertion, presupposition and implicature, the impact on the common ground of these different information packaging forms is similar.

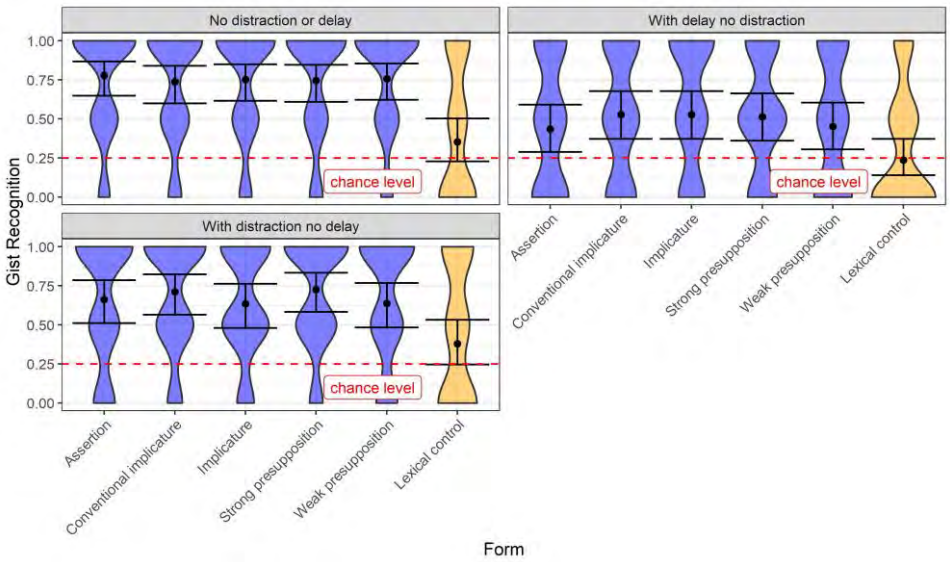

Fig. 1: Mean gist recognition rates by Form, with error bars representing 95% confidence intervals and violin plots representing dispersion.

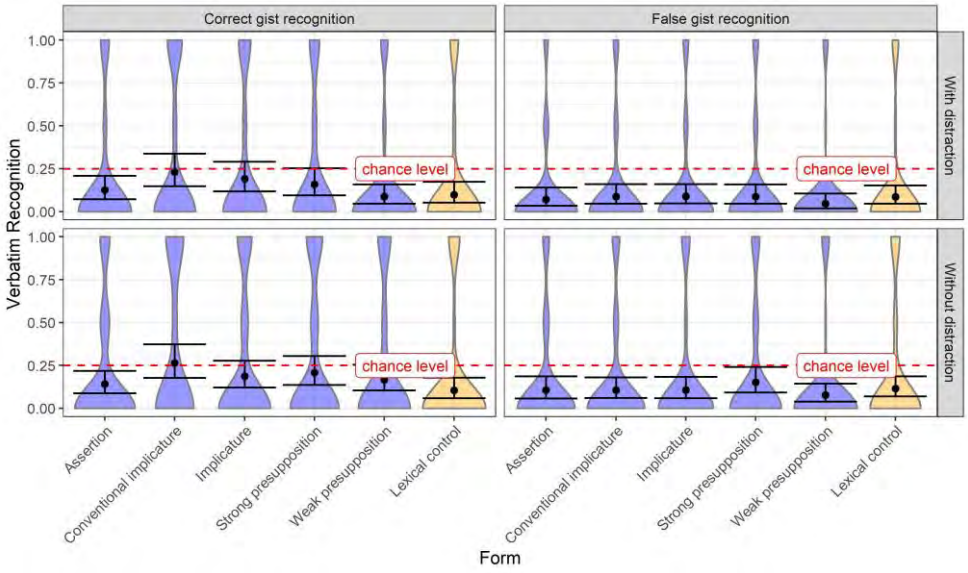

Fig. 2: Mean verbatim recognition rates by Form, with error bars representing 95% confidence intervals and violin plots representing dispersion.

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On responsibility perception in femicide news reports: critical analysis bridging cognitive theories and computational tools

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Keywords: responsibility framing, femicide, frame semantics, construction grammar, critical discourse analysis

The same event can be reported in many different ways, according to the person who describes it and the linguistic choices that they make. This is true also when we think of events that have a strong social impact. In our work, we propose a new way of investigating how linguistic expressions can influence the perception of socially-relevant phenomena. Expanding on previous contributions in the field of psycholinguistics, cognitive linguistics and critical discourse analysis, we demonstrate how semantic frames and syntactic constructions can be particularly useful to investigate the perspectivization of texts, by conducting a large-scale survey to collect human judgements on Italian news articles about numerous cases of femicide.

Based on the analysis of Italian news reports, Pinelli & Zanchi (2021) claim that different syntactic constructions can influence the perception of responsibility in cases of gender-based violence (GBV); for instance, they demonstrate how the use of passive constructions contribute to the backgrounding of the agent (in the case of femicide, the murderer), representing him as less responsible for the violence. Meluzzi et al. (2021) aim to explore the correlation between argument structure constructions and responsibility perception in cases of femicide by carrying out a survey in which participants are asked to judge artificially constructed sentences; the results are in line with the outcomes of Pinelli & Zanchi (2021), confirming that the choice of linguistic expressions can have an impact on the perception of responsibility of the participants and even promote victim-blaming.

In our work, we attempt to delve deeper into perspectivization and the perception of responsibility by proposing a method that builds on Fillmore (2006) frame semantics theory: in addition to the analysis of syntactic constructions, we observed the presence and relevance of semantic frames. Through the use of a semantic parser (Xia et al., 2021), we extracted the frequencies of semantic frames and syntactic constructions in the articles contained in the RAI Femicides Corpus (Belluati, 2021). We then selected a set of frames and constructions that we deemed relevant for studying the perspectivization of event descriptions, and we automatically selected from the articles 400 sentences containing those frames and constructions. The sentences were presented to 240 participants, who were asked to answer questions about the agentivity and responsibility of the participants in the events.

In our presentation we will present the setup, the practical implementation process and the results of the questionnaire, which have indeed demonstrated that different linguistic choices do have an influence on how the readers perceive the responsibility ascribed to the agent and the patient in Italian reports of GBV.

Finally, we will present computational experiments that we have performed on the data that were obtained during the research: we used recent techniques from Natural Language Processing (NLP) to train models to predict responsibility perception scores from raw text, and to rewrite text, suggesting alternative ways of describing the same femicide event but with more or less emphasis placed on the murderer.

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Conceptualisations of fatherhood and otherness in the television series *The Mandalorian*.

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Keywords: Fatherhood, Otherness, Conceptualisation, Telecinematic Discourse, *The Mandalorian*

It has been argued that characters in TV series appear to be fairly stable, which is reflected in their dialogue, and "this linguistic stability is the norm for many contemporary television characters […]" (Bednarek 2011: 203). However, this may be dependent on the genre. For example, Mandala (2011: 223) has shown that the character of Seven of Nine in *Star Trek: Voyager* changes quite drastically over the course of three seasons and that "[t]his fundamental change in her character is made manifest through changes in her language […]."

In *The Mandalorian*, a television series set in the *Star Wars* universe, the main character Din Djarin likewise undergoes significant changes throughout the first two seasons of the series, going from lonesome bounty hunter to adoptive single father on the run during the first season and being forced to increasingly question his Mandalorian beliefs in the second season. This then begs the question to what extent the changes this character experiences are also reflected in his language use. In particular, I am interested in how the relationship between the Mandalorian and the child as well as the Mandalorian's evolving identity as a father is conceptualised in the dialogue of the show. In addition, a recurring topic in the series is otherness, as both the Mandalorian Din Djarin and the child Grogu are constructed as being different.

Quinn (2020: 12) has noted that it is the child "who finally loosens Djarin's tongue." A preliminary quantitative analysis, however, has revealed that the share of the Mandalorian's dialogue versus that of other characters does not change that much over the course of the first season. This thus calls for a more in-depth analysis of the dialogue using corpus linguistic methods (cf. Bednarek 2012), with the aim of uncovering how the character adapts to his new role as a father, how fatherhood – an important theme in *Star Wars* – is conceptualised and how the two main characters are linguistically constructed as others.

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"Meaning in life" through language

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Keywords: Meaning in life, Contrast, Repetition, Vision

"Meaning in life" is one of the most abstract, complex and elusive moral concepts, the sources and causes of which are difficult to pinpoint and track. When it comes to the way one grasps the meaning of one's own life, or the attitude one adopts towards life, there is also a great deal of subjective choice. This raises the question of how such a concept can be studied. The current paper explores speakers' construal of subjective meaning in life and the role of bodily experience in it, through qualitative-empirical method of inquiry, which examines the way speakers talk about "meaning in life" in spoken discourse (Lakoff & Johnson, 1980, 1999; Johnson, 1987, 1993, 2008, 2014; Gibbs, 1994; Jackendoff, 1994; Fauconnier & Turner, 2002).

30 Semi-structured in-depth interviews with native Hebrew-speakers in three age-groups: 10-year old children; 40-50 year old adults; and octogenarian Israelis, were conducted in Hebrew in order to reveal speakers' understanding and construction of the concept in different life-stages and across the life-span (Erickson, 1959, 1963, 1968). The questions that comprise the interviews concern the ways that the interviewees grasp the meaning of their lives, as well as their attitudes toward events, people and other aspects of life they take to be meaningful. Interviews in spoken language provide spontaneous language-data that can reveal both conscious and unconscious cognitive processes (Halliday, 1987). Assuming that language-use involves conscious and unconscious linguistic choices, investigating these choices sheds light on speakers' conceptualizations and modes of understanding (Halliday, 1976, 2010).

Results reveal three prominent linguistic mechanisms, used by speakers in order to construct a sense of meaning in life or stress the significance of different aspects, events and people in their lives. These mechanisms reveal shared aspects of people's understanding of the concept, as well as bodily processes involved in its construction:

(1) Contrast. Negation, repetition, or lexical contrasts serve as a cognitive strategy to emphasize the significance of the events interviewees choose to discuss, as well as to emphasize their roles within their experiences and life stories.
(2) Analogy. Lexical, semantic or syntactic repetitions serve as a cognitive strategy to construct an experience as meaningful.
(3) Vision. Vision metaphors and verbal constructions are frequently used by speakers to highlight understanding and meaningfulness, and also reveal the role of bodily experience in the construal of "meaning in life".

Through a series of different empirical examples, the paper will demonstrate how these linguistic strategies serve both as cognitive mechanisms to make sense of the concept of "meaning in life" and as constitutive mechanism of coherence and a sense of meaning in life. The presentation will also discuss some differences between the age-groups. Concluding remarks will highlight the importance of further investigation of the interrelationships between meaning in life and meaning in language.

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Building the French-language MetaNet Wiki: A collaborative online resource for metaphor and image schema analysis *en français*.

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We introduce French MetaNet, a Wiki for French-language and cross-linguistic metaphor analysis modelled on English-language MetaNet. Created by a North American and European francophone team, the Wiki comprises Hexagonal and Canadian French. Based on Conceptual Metaphor Theory (CMT) (Croft 1993; Grady 1997; Lakoff & Johnson 1980; Sullivan 2013; Kövecses 2005) and frame semantics (Fillmore 1982; Lakoff 1987), it provides a MediaWiki (Krötzsch et al. 2007) interface to access metaphors, frames and image schemas, cross-referenced to English and Spanish MetaNets. This repository is a milestone in cross-linguistic metaphor analysis (Kövecses 2005; David 2017; Sweetser et al. 2019; Despot et al. 2019; Brdar et al. 2019). We outline our economical "combined top-down/bottom-up approach" (Sweetser et al. 2019: 37); problems faced; and solutions implemented. This approach reconciles the challenges posed by "the principle that metaphor discovery can only happen over large and diverse linguistic data sets" (David 2017: 575) while minimizing the inherent biases "by metaphor research done in English and by English linguistic resources" (Despot et al. 2019: 129).

Because many primary metaphors are assumed to be near universals (Grady 1997), we began by translating image schemas, culturally-shared frames and primary metaphors from English MetaNet. A problem here was the paucity of French-language CMT literature. Although de Fornel and Lecercle (1986) have translated into French Lakoff and Johnson's *Metaphors We Live By* (1980) and others (e.g., Rossi 2016, 2019, 2021; Fasciolo 2016) have published on CMT in French, most work on French CMT is in English. We searched academic and Internet sources for translations. For example, we could translate SIMILARITY IS PROXIMITY into LA SIMILITUDE EST LA PROXIMITÉ by finding de Fornel and Lecercle's translation of the target (1986:122) and the Office québécois de la langue française's source translation; others, such as TIME IS MOTION/LE TEMPS EST MOUVEMENT (Fasciolo 2016: 51), were translated by digging deeper into French CMT literature (Rossi 2019; Rossi & Fasciolo 2016; Resche 2016; Prandi 2016). We also faced dialectical variation. For example, when translating PESSIMISM IS DARKNESS, we chose between L'OBSCURITÉ in Hexagonal French, or LA NOIRCEUR in Canadian French.

Next we collected example sentences. This entails collection, validation, and glossing/translation; three individuals vet each example. Data collection draws from a range of Internet registers both formal (i.e., government documents, prescriptive academic institutions, newspapers, dictionaries, etc.) and informal (i.e., social media, entertainment magazines, blogs, etc.). In (1) and (2) we have data from a Parisian newspaper and a personal blog.

This is also when we employed the bottom-up approach, adding distinctly French metaphors to the repository. For example, the conventional (in English) DESIRE IS HUNGER led to LE DÉSIR EST LA SOIF (DESIRE IS THIRST). This is conventional enough to be used in journalistic Canadian French, but in English is typically informal, chiefly slang, as seen in (3) and (4).

Currently French MetaNet contains 766 frames, 187 metaphors, and 105 full metaphor entries. By June, it will have ~700 metaphor names and 230 entries. It will be a publicly accessible reference and pedagogical tool for metaphor theorists, frame semanticists, and anyone working with French.

Data

1) le Royaume-Uni accélère le pas pour la troisième dose
the Kingdom-United accelerates the footstep for the third dose
"the United Kingdom accelerates their pace for the third dose"
Le Monde, Ducourtieux 2021
Metaphor: UNE ACTION, C'EST UN MOUVEMENT PHYSIQUE (ACTION IS MOTION)

2) donner un peu d'espoir à l'amie qui broie du noir
give.INF a small of-hope to DEF.friend.F who grind of.DEF black
"give some hope to a friend who broods in darkness"
Le randonneur, Bougnoux 2019
Metaphor: LE PESSIMISME, C'EST L'OBSCURITÉ (PESSIMISM IS DARKNESS)

3) soif de changement social
thirst of change social
"thirst for social change"
Ici Côte-Nord, Radio-Canada 2021
Metaphor: LE DÉSIR EST LA SOIF (DESIRE IS THIRST)

4) What looks banal to one person might qualify as a "thirst trap" to someone else, and what's sexually titillating to some people might bore—or even repulse—others.
Ms. Magazine, Leguichard 2022
Metaphor: SEXUAL DESIRE IS THIRST

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'it semed to be sumthing': Constructing Salem's Witnesses' *Seem*-Construct-i-con

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Keywords: Construction Grammar, construct-i-con, perception verbs, evidentials, Salem witch-trials

The Salem witch-trials of 1692 were conducted to ferret out persons accused of a crime whose purported existence was "based on the belief that the words of certain people in certain circumstances ha[ve] the power to harm others" (Culpeper and Semino 100). Even witnesses could be subsequently accused of this essentially linguistic crime. The trials often centered around "spectral evidence" (*Records of the Salem Witch-Hunt, or RSWH,* 23), a type of "evidence" based on the idea that a person's spirit could be "willingly sent out...to harm people through the agency of the Devil" (*RSWH* 23). As a result, witness testimony sometimes relied upon constructions that included verbs of perception and appearance, especially the verb *seem,* which can "hedge probability or indicate hearsay depending on the construction it appears in" (Aijmer 2009: 64). Unusually, and in contrast to perception verbs whose meanings rely solely on sensory data such as *sound* or *look*, *seem* "can occur with both observational and knowledge-based evidence" (Aijmer 2009: 68), categories of evidence whose boundaries were heavily contested during the Salem witch-trials. Since "spectral evidence" draws upon a phenomenon whose existence, even in 1692, was controversial (*RSWH* 23), it is plausible that witnesses FOR and AGAINST the accused were employing *seem* constructions in differing ways, as either a verb of perception and appearance, or inference (Grund 2012: 10-11).

This paper presents a Construction Grammar analysis of the various constructions involving *seem* recorded in the testimonies of the Salem witch-trial witnesses. Our ultimate goal is to inform the general, diachronic understanding of how English-speakers employ this unusual verb of perception *seem*. To achieve this goal, we analyse both the classes of constructions and the links that connect them (Goldberg 1995) in the localized *seem* network of the Salem villagers' construct-i-con (Hilpert 2019: 50-74). We predict that, given their antithetical stances on the validity of the spectral evidence, witnesses speaking FOR the accused will employ *seem* in different types of constructions than those speaking AGAINST.

The *Records of the Salem Witch-Hunt* contains approximately 377 witness depositions, statements, and testimonies. The 34 testimonials from FOR witnesses include four instances of constructs using the verb *seem* from two types of *seem*-constructions, both of which involve a *TO*-construction, as seen in (1) and (2). There is a much wider variety of *seem* constructions in the 269 AGAINST documents examined thus far, in which appear twenty-four instances of a construct using the verb *seem,* with eight construction types represented. There are many instances of the two types of *seem* + infinitive, as seen in (3) with copular verb and (4) with a non-copular verb. However, there are also instances of: parenthetical *seem*, as seen in (5); *seem* + adjective, as seen in (6); *seem* + *as if* clause, as seen in (7); nominal *seem,* as seen in (8); present participle *seeming*, as seen in (9); and adverbial *seemingly*, as seen in (10). The latter three constructions are rare or extinct in Present-Day English.

This study builds on Grund's (2012) analysis of Salem testimonial evidentials and on Gisborne & Holmes's (2007) diachronic corpus study on the semantic development and grammatical change of English verbs of appearance in the Middle English and Early Modern English periods. Here, we juxtapose Gisborne & Holmes's seven categories with those discussed in Whitt, Aijmer, and López-Couso & Méndez-Naya, who studied *seem* constructions: in comparison to those of the German verb *scheinen* (Whitt 2009: 241-45, 250-51); in their translations into Swedish (Aijmer 2009: 72-85); and as parentheticals (López-Couso and Méndez-Naya 2014: 296-304). As Smirnova & Sommerer (2020: 20) recently pointed out, "the general organization of the constructicon is clearly an under-researched area". This paper will contribute to the elucidation of the *seem* construct-i-con's development through a localised analysis of the Salem witch-trial written testimonies.

Data

(1) *Seem* + infinitive (copular verb)

Goody Nurse has been troubled with an infirmity of body for many years which **the jury of women seem to be afraid it should be something else**. [*RSWH*, no. 294]

(2) *Seem* + infinitive (non copular verb)

when she met with any affliction **she seemed to justify God** and say that it was all better than she deserved though it were by false accusations from men. [*RSWH*, no. 317]

(3) *Seem* + infinitive (copular verb)

That night after I been with the select men, I saw something appear at French's Cove before me, like a cat, as I apprehended. And then I looked wishfully upon it, and **it seemed to be something like a little dog**. [*RSWH*, no. 40]

(4) *Seem* + infinitive (non copular verb)

did then see a woman standing between the cradle [...] room, and the bedside and **seemed to look upon him** so he [*RSWH*, no. 230]

(5) Parenthetical *seem*

and he laid on his back on the ground and was sliding into a deep place **(as to him seemed)** but taking hold of some brush or bushes and so recovered [*RSWH*, no. 141]

(6) *Seem* + adjective

and they all came up together such a breath **that it seemed impossible to escape being trod down by them** but they went all past and then appeared no more [*RSWH*, no. 149]

(7) *Seem* + *as if* clause

the said Bishop got him to do some work for her, for which she gave him three pence, **which seemed to this deponent as if it had been good money**, but he had not gone [*RSWH*, no. 231]

(8) Nominal *seem*

he, at the same time, seeing the said Bridget Bishop sitting at the foot of his bed. **Being to his seeming**, it was then as light as if it had been day [*RSWH*, no. 231]

(9) Present participle *seeming*

This deponent among other things told her he believed she was a witch by what was said or witnessed against her **at which she seeming not well affected** said that [*RSWH*, no. 374]

(10) Adverbial *seemingly*

and her mouth **seemingly to my apprehension** much abused and hurt with the bridle bits [*RSWH*, no. 321a]

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Semantic organization of space-motion mappings to action and time in Wolof

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Keywords: Time, space, motion, metaphor, Wolof

Certain temporal metaphors are well described for a variety of languages (Dancygier & Sweetser 2014), but these metaphors account for only a small portion of temporal semantic structures. This talk discusses structures that are similar to canonical temporal metaphor (Gentner et al. 2001), but also differ in interesting ways. We intermingle well known descriptions with new findings. Basic terms of analysis include: Presence vs. absence of motion, what is moving relative to what, number of Movers, and direction of motion. Innovations are of two kinds: i) modifying current analyses, and ii) adding a different kind of structure. The data mostly come from ethnographic interviews conducted in Wolof with monolinguals in rural Saloum, Senegal, West Africa.

• *"Moving Time" within the present*

The Moving Time metaphor has been defined in terms of Past-Present-Future. For example, in (1) a Future time is coming toward the Present.

1) *Tabaski* ***mungi ñów****.*
Tabaski 3.PRESENTATIVE come
'Tabaski (a holiday) **is coming**.' I.e. it is in the near future. (Canonical Moving Time) [Positive Black Soul]

However, *mungee ñów* 'it's coming' in (2) is about the current perceptual field, and so does not involve a distinction between present and future.

2) (*Xam nga li nga xam ne yaa ko jis tey),*
yaŋ koy xool.
you:PRESENTATIVE it:IMPERFECTIVE watch
Mungee ñów *de, yaangi topp ci kow am.*
it:PRSNTTV:IMPRF come CERTAINTY you:PRSNTTV follow LOCPREP top GEN
(Boobu de, du la réer.) [Saloum KB 40:35]
('You know that what you see today,') "you are watching it. **It's coming!** You're following right on top of it. (That won't be lost on you!)"

Example (2) instantiates the same basic structure as Moving Time in (1), but the process in (2) occurs within the present moment.

• *Mapping whole frames vs. parts of frames*

In (1) Moving Time is a complete, coherent mapping of a motion frame onto a temporal frame. Another such complete mapping is found in (3), which has a verb of motion and the Path-Ground phrase *ba ci kanam* "to.the.point.of at front" that elaborates the motion.

3) **Buñ dem-ee <u>ba ci kanam</u>** dinga gis
when:we go-COND to.the.point.of LOCPREP front you.FUTURE see
"When we have gone until <u>at front</u>, you will see." 'When we get farther <u>ahead</u> [i.e. 'later'], you will see.' (E.g., the addressee will see that what the speaker had been saying is true.) [APS, Ba:211, constructed]

Example (4) below has the same Path-Ground phrase seen in (3) — *ba ci kanam* 'to.the.point.of at front'. But in (4), the progression from earlier to later is expressed without a motion metaphor.

4) **… buñ toog-ee** **ba** **ci** **kanam…**
when:we sit-COND to.the.point.of LOCPREP front
"…when we have sat until at front…" '…at a later time of year' [the speaker then elaborates on the topic of dawn and clock times]. [Saloum SJ 32:05]

By contrast, (5) below maps motion onto temporal progression, but the Ground of the motion event (Talmy 2000) is not recoverable from the utterance.

5) Bu mboq ñoree, nga **dem** tuuti xaal ñor, sunna ñor.
when corn ripe:COND, you go little watermelon ripe, millet ripe
"When corn gets ripe you go a little bit watermelon gets ripe, millet gets ripe."
'After the corn gets ripe, a little later the watermelon and millet get ripe.' [Saloum. MJ 8:30]

To summarize, Path-plus-Ground vs. fact of motion are separable components of a space-motion metaphor of time. This is not surprising in a theory of conceptual blending, because blending is opportunistic (Fauconnier & Turner 2002).

• *Adding action*

Example (6b) (repeated from 2) instantiates a striking contrast between canonical temporal metaphor and a metaphor of action. The speaker presents the two clauses of (6b) as depicting a single complex event in which something is coming and you are following it with your attention. But the "coming" event and the "following" event do not merge into a single consistent image, since something that is coming is moving toward you while something that you are following is moving away from you.

6)
a. yaŋ koy xool.
you:PRESENTATIVE it:IMPERFECTIVE watch
b. Mungee ñów de, **yaangi** **topp** **ci** **kow** **am**.
it:PRSNTTV:IMPRF come CERTAINTY you:PRSNTTV follow LOCPREP top GEN
a. "You are watching it. It's coming!"
b. "**You're following right on top of it**."

As we have seen, the first clause of (6b), with *ñów* 'come', is a variant of a canonical temporal metaphor. The second clause with *topp* 'follow' adheres to different principles compared to the first clause and also compared to canonical temporal metaphor with *topp* 'follow'. This suggests contrasting principles that structure canonical temporal metaphor vs. metaphors of action.

To summarize, we have seen a modification of the Moving Time metaphor, and we have discovered that Path-plus-Ground and fact of motion are separable components of a space-motion metaphor of time. Finally, we will discuss a case in which a metaphor of action adheres to different principles than canonical temporal metaphor (Moore 2014).

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Title: Lexical Semantic Change and the Discursive Construction of Political Identity: *Narrative*, *Gaslighting*, and *Performative Wokeness*

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Keywords: Semantic/Pragmatic Change, Reflexivity, Language Ideology, Political Correctness, Rhetoric

In the 4th century BCE, Aristotle asserted that "man is the political animal" (*Politics* 1.2). Since humans are also linguistic animals, it follows that a theory of politics should include a theory of language and vice versa. The social turn in the cognitive sciences and anthropology emphasizes that human thought and language is as much an effect of interpersonal social action as it is a motivator (Agha 2003; Dingemanse et al. 2023; Gal and Irvine 2019), and, by extension, that the political and ideological environments that language users find themselves in affect their thoughts and language. While the interpersonal focus is not new to usage-based grammar (Langacker 2001), we argue more focus needs to be given to how ideology affects language change. This talk investigates a cluster of terms which have recently shown a sharp increase in usage over the past five centuries and especially in the last decade: the adverb *literally,* the verb *to gaslight,* the adjectives *woke* and *performative*, and the noun *narrative*.

In all these cases, a construction which starts in relatively narrow and homogeneous communities spreads to a diverse and more general audience, indexing traces of ideological concepts from the narrow community and allowing for stance taking on those concepts: thus, in the case of *literally*, the concept of 'literal meaning', which starts off in Christian hermeneutics as the lowest level of scriptural interpretation (the carnal, not the spiritual) is reinterpreted in the modern scientific age as the privileged and original level of meaning from which figurative meanings depart. This conceptual-ideological shift contributes to, and is reflexively reinforced by, the word *literally*'s conventionalization as an emphatic stance marker; utterances like "that is literally what happened" (COCA), thus, both index and entrench an ideology of language use that privileges the "literal", referential and informative over the "figurative", interpersonal and affective functions of language. We illustrate familiar analyses for *narrative*, which shifts from referencing a story to expressing a stance on politically biased spin; *gaslight*, which shifts from metonymically referencing a cinematic relationship from the 1944 film *Gas Light*, where a person intentionally drives his significant other mad through lying about flickering a gas light, to referencing a general act of manipulation, frequently through an accusatory speech act; *woke*, which shifts from an AAVE expression of well-informedness to a politically progressive stance of well-informedness to a pejoratively ironic stance of politically progressive ideology; and *performative*, which shifts from a philosophical expression that an entity is reality-performing to an expression that an entity is reality-mimicking.

While these developments all fit a classic pattern of semantic bleaching and pragmatic strengthening (Bybee 2001, Traugott 1988), we suggest that these processes themselves are driven by the ideological contexts which give these constructions their social value. Ultimately, these results remind us of the political potency that resides in our lexical choices and of the basic fact that language is political.

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Diatopically marked phraseological units with colour terms in Albanian

This article examines phraseological units (Palm 1995, Burger 2015) marked diatopically (Földes 1996, Burger 2000) in Albanian, presenting the theoretical and analytical approach – from a socio-cognitive (Kristiansen, Dirven 2008) and pluricentric perspective – used in my doctoral thesis entitled "Farbphraseologismen Albanisch-Deutsch kontrastiv[1]". The diatopic differentiation has only recently become an object of study in phraseology (Albaladejo-Martínez 2018). In addition, these "research deficits" or gaps (Albaladejo-Martínez 2018:207) are even more evident in the Albanian language (Muco 2020).

Through the administration of a questionnaire in Albania (Shkodra, Tirana, Vlora) and Kosovo (Gjakova, Pristina) „territorial duplicates[2]" emerged, that is „synonymous lexemes that differ from one another only in their regional (territorial) distribution[3]" (Palm 1995:29): for example, in Kos. *duar* ***dukat*** = in Alb. *duar* ***flori/të arta*** (literally transl. 'golden hands'); in Kos. *e ka zemrën* ***dukat*** = in Alb. *e ka zemrën* ***flori*** (literally transl. 'she/he has a golden heart'). So, according to Burger (2015:208), these diatopic variants are "semantically fully equivalent[4]".

The different chromonyms for "golden" (Katelhön, Muco 2022) found as constituents of the before mentioned fixed multi-word expressions contribute to the formation of phraseological synonyms used in two different centres of the Albanian language (Muco 2018, 2020). In fact,

> context is a dynamic construct that appears in different formats in language use both as a repository and/or trigger of knowledge. Consequently, it has both a selective and a constitutive role (Kecskes 2015:116).

Depending on the context, namely on the linguistic centre – although this study is a synchronic analysis – the colour terms in question are loanwords from Latin and Italian and the interviews provided evidence for diachronic processes of linguistic contact and change (cf. Barbour, Stevenson 1998: 81):

> Language change is not just a peripheral phenomenon that can be tracked on to a synchronic theory; synchrony and diachrony have to be viewed as an integrated whole. Change is both a window into cognitive representations and a creator of linguistic pattern. Moreover, if we view

[1] *Phraseological units with colour naming: A contrastive analysis of Albanian and German*, Università degli Studi di Milano (Milan, Italy), supervisor Prof. Dr. Peggy Katelhön.
[2] In the original language: "territoriale Dubletten".
[3] In the original language: "synonyme Lexeme, die sich nur in ihrer regionalen (territorialen) Verbreitung voneinander unterscheiden".
[4] In the original language: "semantisch völlig äquivalent".

language in the manner described in this book, as both variable and having gradient categories, then change becomes an integral part of the complete picture (Bybee 2010:105).

To conclude, focusing on usage-based variation, the present contribution aims to 1) illustrate empirical data collection and findings ('mixed methods research', cf. Paltridge, Phakiti 2015) related to colour-phraseological units in Albanian, 2) conduct a cognitively oriented analysis of diatopic marked colour-phraseologisms, and 3) explain chromatic figurative meaning and phraseological conceptualization.

Keywords: Albanian, colour phraseologisms, cognitive sociolinguistics, variation

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Typing /s/ – Morphology between the keys?

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Keywords: Typing, Spelling, Phonetics, Morphology, Language production

In recent years, evidence has been accumulated that both response latencies and within-word interkeystroke intervals (IKI), i.e., the time that elapses between the pressing of two keys, are influenced by lexical and sub-lexical variables. Typing timing appears to be susceptible to manipulations of, for example, word-, constituent-, bi- and trigram-frequencies (e.g., Baus et al. 2013; Betram et al. 2015; Bonin & Fayol 2000, 2002; Sahel et al. 2008; Scaltritti et al. 2016), semantic transparency (e.g., Gagné & Spalding 2016; Libben & Weber 2014), prosodic boundaries (e.g., Fuchs & Krivokapic 2016), syllable structure (e.g., Nottbusch et al. 2005; Weingarten et al. 2004; Will et al. 2006), or morphological structure (e.g., Gagné & Spalding 2016; Will et al. 2006). In other words, IKIs in typing appear not to be determined solely by random variation or by non-linguistic factors such as typing experience or location on the keyboard. Instead, existing evidence suggests a rather complex interaction of writing and the linguistic processing units involved, which appears to be comparable to what we find in speech. Typing as a peripheral process might be similar to articulation in being a window into the processing architecture involved in language production and the interaction of central and peripheral production stages in general. Despite the obvious commonalities, however, research on durational differences in typing has remained largely independent of research on durational differences in pronunciation. This lack of direct comparison has left unanswered many questions regarding the similarities – and differences – of the two language production modes.

This paper presents such a direct comparison. Our approach tests the generalizability of results from the articulatory domain with a well-researched phenomenon: word-final /s/ in English. Recent research has repeatedly demonstrated that word-final /s/ in English differs in duration depending on its morphological status (Zimmermann 2016; Plag et al. 2017; Plag et al. 2020; Schmitz et al. 2021; Tomaschek et al. 2019). In an extensive online typing study using the experimental design of Schmitz et al. (2021), we test their results for transferability to the written domain. Specifically, our study investigates whether language users type word-final /s/ in English pseudowords at different internal boundaries – non-morphemic, plural, auxiliary has-clitic and is-clitic – with differing speeds and how our results compare to those found by Schmitz et al. (2021). For acoustic duration, the authors report that non-morphemic /s/ is longer than plural /s/, which in turn is longer than the auxiliary clitic /s/.

Analyzing our data with generalized additive mixed models (Wood 2017), we find that the influence of morphological structure on articulation and typing timing does not follow an identical principle. Participants in our experiment type non-morphemic /s/ and plural /s/ at almost identical speed. A significant difference emerges, however, for the typing of auxiliary clitics. Our results suggest that processing units other than morphemes might be dominant in written language production, which we discuss in relation to current theories of (written) language processing.

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Lexical and constructional density in parentheticals: cognitive aspects and metadiscursive functions

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Keywords: parentheticals, lexical and constructional density, metadiscursive functions, cognitive complexity

Parentheticals are elements, phrases or clauses that deviate from the discursive line to introduce some kind of information, commentary, evaluative judgement, or data of various kinds (Dehé and Kavalova 2007, Fuentes Rodríguez 2018, Müller 2020). Prototypically, they exhibit a disruptive character, both in spoken and written discourse, which can go so far as to dismantle a well-established grammatical construction. Although there is a relatively extensive tradition of research on parentheticals in various languages which, among its focuses of interest, contemplates the analysis of the discourse functions associated with different types of constructions (cf. Dehé and Whichman 2010), certain marks of function recognition remain unexplored. From a linguistic-cognitive (Cognitive Grammar and Construction Grammar) and pragmatic approach (metadiscourse studies), this paper proposes the measurement of the lexical and constructional density of the parenthetical as a relevant key to the recognition of metadiscursive functions in argumentative discourse. Lexical density is calculated by dividing the number of lexical items contained in the parenthetical by the total number of orthographic words in the parenthetical (cf. Johansson 2008). Constructional density is defined by the number and structural complexity of the constructions contained in the parenthetical. The focus of the investigation is only on parentheticals enclosed in dashes or parentheses. It is considered that the fact of establishing a separation space larger than that established by commas and, therefore, clearly identifiable, would represent a call for attention to the probable cognitive relevance of the semantic-pragmatic content of the parenthetical. As a first hypothesis, it is argued that there is a link between the degree of lexical density of the parenthetical (high, medium, or low, according to a quantitative scale established on the basis of the data obtained) and the specific type of metadiscursive function it performs. The need, from a theoretical and analytical point of view, to complement the analysis of lexical density with the measurement of constructional density, leads to the proposal of a second hypothesis: there is a directly proportional relationship between both types of densities; in direct correlation, in turn, with the metadiscursive functions identified. The analysis is carried out on a corpus of data (one hundred cases), extracted from essays by renowned latinamerican writers (Octavio Paz, Jorge Luis Borges, Beatriz Sarlo, among others). The results allow us to confirm both hypotheses and to establish a semantic-functional differentiation within each of the categories of metadiscursive functions.

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A Comparison of Sentence-Final Expressions in English, Japanese, Chinese, and Korean Based on Translations of English Tag Questions

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Keywords: A comparison of four languages, Sentence-final expressions, Tag questions, Subjectivity

This paper examines the expressions related to coordinate the mutual recognition of the speaker and hearer at the end of sentences in English, Japanese, Chinese, and Korean, and argues that while sentence-final expressions in English and Japanese have little similarity to each other, Chinese and Korean have structural overlapping with both English and Japanese and these two also choose sentence-final forms depending on the level of speaker's recognition towards the hearer.

According to Traugott (2012), Right Periphery, or sentence-final expressions, indicate intersubjectivity in all languages. As shown in (1) below, in sentences consisting of a very limited elements, expressions showing the speaker's sharing mind with the hearer are observed at the end of sentences.

(1) a. Cold, isn't it? b. 寒いね。 c. 好冷啊. d. 춥네.

In English (1a), a short question is added, and in the other three languages (1b-d), a sentence-final particle is added. However, Chinese has other forms (2a-b), which have similar constructions to English tag questions. Korean also has expressions like (3) that can be regarded as a tag question.

(2) a. 你 今天 去 图书馆, 是 吧？
you today go library be tonal-word

b. 你 感 冒 了， 是 不 是？
you have a cold tonal-word be not be

(3) 여기에 앉고 싶지, 그렇 지?
here sit want to it is final-particle

Previous studies have not discussed Chinese and Korean variety typologically, including those forms mentioned above. For example, a typological analysis of sentence-final particles by Fujiwara (1990) does not discuss Chinese and Korean tag question forms as shown in (2-3). A typological analysis of territory of information by Kamio (2002) deals with the Chinese forms (1c) and (2a), but not (2b), and does not mention Korean.

In this paper, I discuss the diversity of these sentence-final expression forms and their relation to cognitive typology, using data of 170 English tag questions retrieved from the *Harry Potter* movie series and their translations in dubbed movies of the three languages under investigation here. These examples contain the (2a) pattern; 是/对/好+tonal word, 108 examples, the (2b) pattern; 是不是/对不对, 16 examples in Chinese, and the (3) pattern; 14 examples in Korean.

In the analysis, I applied the notion of core's anaphoric use (Langacker 2009), which shows a tag structure [auxiliary (existential verb) + subject + polarity] and its role [CORE/ remainder] in cognitive grammar. Moreover, I focused on an interesting connection between the structural patterns in Chinese and intonation of original tags in English. Rising tones were often observed in the examples of (1c) and (2b) pattern and falling tones were observed only in the (2a) pattern. The results including these findings suggest that each structural pattern has specific meaning and function which is related to the level of the speaker's recognition towards the hearer or the degree of subjectivity.

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Affective meaning in colexification networks and applications to automatic lexica expansion

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Keywords: Cross-linguistic colexifications, affective meaning, semantic networks

Machine learning methods have proven to be very effective in the analysis of human language and in understanding emotion expression. However, in order to improve AI and connect it to social sciences, we need to explore the meaning structure of human language and the applications of linguistic properties to NLP. With this aim, we analyse the relationship between colexification occurrences and meaning similarity in the domain of affective meaning, and we develop a method to automatically infer the valence, arousal and dominance of words. We find robust evidence that affective meaning is encoded in colexification networks and propose a tool that improves state of the art methods to infer the affective ratings of words. This constitutes a first step towards explainable and theory-based methods for text analysis and for the automatic expansion of affective science resources.

Colexification is a linguistic phenomenon that occurs when multiple concepts are expressed by the same word in a language (François, 2008). The collection of colexification occurrences can be shaped in the form of a network, where nodes represent concepts and edges track colexification occurrences between pairs of concepts. Edges in the network are weighted according to the number of languages and of language families that present a colexification between the same pair of concepts. Colexification patterns are believed to be determined by semantic relationships between concepts (François, 2008), thus colexification networks should also encode the semantics of concepts. In this work, we test this hypothesis in the field of affective meaning and explore applications to the automatic expansion of preexisting affective lexica in an unsupervised, theory-driven and explainable way.

To this end, we consider two English affective norms lexica (Mohammad, 2018; Warriner et al., 2013) and three colexification networks: CLICS^3 (N=1,647) (Rzymski et al., 2020) and two networks built from crowdsourced translations (OmegaWiki[1], N=10,323) and from open source bilingual dictionaries (FreeDict[2], N=27,939). We deploy the network structure to estimate the affective meaning of words according to the three dimensions of valence, arousal, and dominance in the following way. First, we map words of the affective lexicon to nodes in the network, as shown in Figure 1 left panel in the case of the OmegaWiki network. We then estimate the affective meaning of a node as the weighted mean of the affective meaning of its neighbors. We do so for the three dimensions of valence, arousal and dominance. Although this method is a simple, unsupervised computation, it reaches high correlation between the true affective rating and the predicted one, as represented in the case of OmegaWiki and the affective dataset (Mohammad, 2018) in Figure 1 right panel. Indeed, in this case the correlation between computed and true valence is significative and high (ρ = 0.839). Outliers highlighted in Figure 1 right panel give further insights into the annotation procedure for ground truth data and into the cultural component of such annotations and of affective meaning in general.

We evaluate how colexification networks predict the affective norms of words that do not belong to the affective lexica with 10 repetitions of a 75/25 split cross validation as in (Mandera et al., 2015). We find high correlation coefficients between our estimates and the empirical values, which are comparable with and in some cases outperform machine learning methods on large corpora (Mandera et al., 2015). Our results also present higher coverage of the semantic space than state-of-the-art methods, that is our method can estimate the affective ratings of a higher number of words than what could be previously achieved with word embeddings (Mandera et al., 2015).

The results of this work provide strong support to the hypothesis that colexification occurrences captures meaning similarity between words and that this property is also embedded in colexification networks. Furthermore, our analysis shows that word semantics can be interpolated with colexification networks and that the unsupervised expansion of already existing lexica is possible. This practice has the potential to lower the costs of lexica creation, which usually requires a study to be designed, and a group of non-expert participants to be recruited. Moreover, the resulting algorithm is fully explainable, thus its results can be analysed with respect to, for example, cultural differences in the understanding of emotions.

1 http://www.omegawiki.org
2 http://www.freedict.org

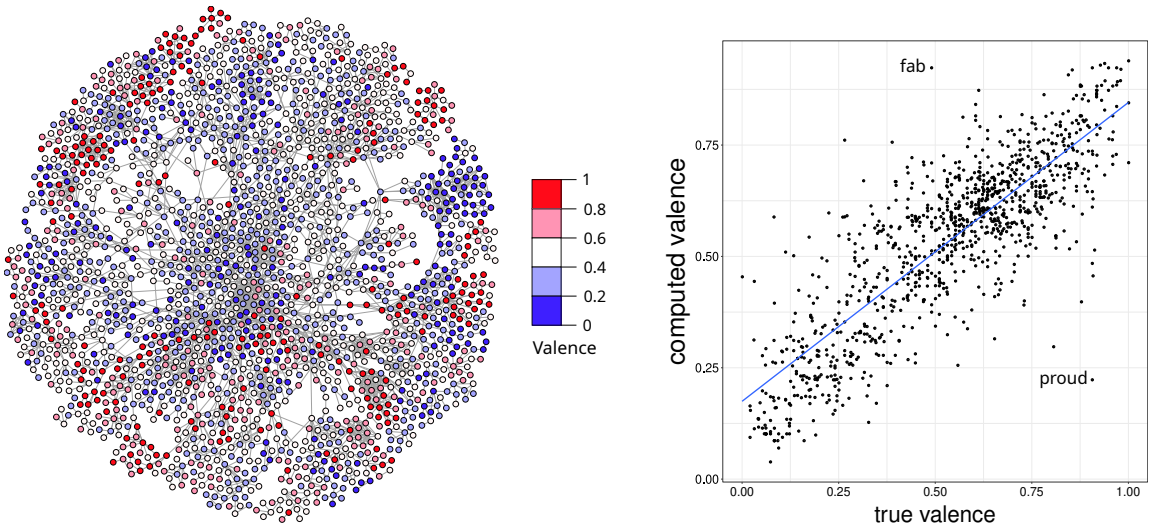

Fig. 1: Left panel: Words from (Mohammad, 2018) mapped in the OmegaWiki colexification network colored according to their valence (low valence, i.e. positive words are colored in blue; high valence, negative words in red). Words cluster according to their valence in the network. Right panel: Correlation of the computed and true valence ratings on the database (Mohammad, 2018) ($\rho = 0.839$, c.i.=$[0.82, 0.856]$, $p < 0.001$). Outliers are labelled.

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“I used to really think that uhm languages did have to be simple”: Grammaticalisation of habitual aspect in World Englishes

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Keywords: World Englishes, grammaticalisation, habitual aspect, structural nativisation, cluster analysis

This paper presents a geographically large-scale, yet structurally fine-grained study on grammaticalisation in World Englishes. Attending to the relatively neglected domain of habitual aspect, we explore structural and areal patterns of conservatism or innovation regarding grammaticalisation and its synchronic reflexes in 13 national varieties. Based on the spoken and written subcomponents for these varieties in the International Corpus of English (ICE; Greenbaum and Nelson 1996), we quantify usage profiles of the habitual auxiliary [*used to* V] (1) and its non-standard variants (2), taking into account semantic (e.g. aktionsart), morphological (e.g. tense), syntactic (e.g. negation) as well as text-linguistic features (e.g. frequency by mode).

(1) *All those civil servants who used to speak in an impeccable monetarist dialect suddenly changed.* (ICE-GB: written)

(2) *Will you use to be more authoritative than than Martin and I … [?]*
(ICE-HK: broadcastDISCS)

Since the historical lexical source construction of the auxiliary *use(d) to* was only compatible with animate subjects and dynamic verbs, degrees of grammaticalisation are reflected by probabilistic context expansion (cf. Himmelmann 2004) regarding the semantic features of animacy and aktionsart especially. These as well as other properties of the *use(d) to* construction are compared across varieties synchronically by means of a quantitative behavioural profile analysis employing hierarchical agglomerative cluster analysis (see Levshina 2015). The corpus results are mixed in that variation and similarities between the English varieties do not seem to follow one single genealogical or areal trend but reveal more individual patterns (see Figure 1), which can be partly explained by specific contact situations (see also Sharma 2009). We therefore discuss the extent to which typical glossogenetic processes of grammaticalisation such as semantic bleaching and typical ontogenetic L2-learner processes such as transfer-based overgeneralisation may conspire in the context of World Englishes. The case study illustrates, among other things, that one and the same synchronic grammatical variant (e.g. present-tense *use to* in Nigerian English) can sometimes qualify both as a conservative relic and as an innovation as long as earlier colonial stages remain unknown. When solely based on synchronic data, reconstructed historical trajectories remain speculative, even for the strongly directional type of change that is grammaticalisation. All this leads us to problematise how, owing to the shortage of corresponding diachronic corpora, attested differences between Inner and Outer Circle Englishes are open to different interpretations within competing narratives such as colonial lag (e.g. Schreier 2019), contact-induced change (e.g. Onysko 2016) and the epicentre hypothesis (e.g. Peters & Bernaisch 2022).

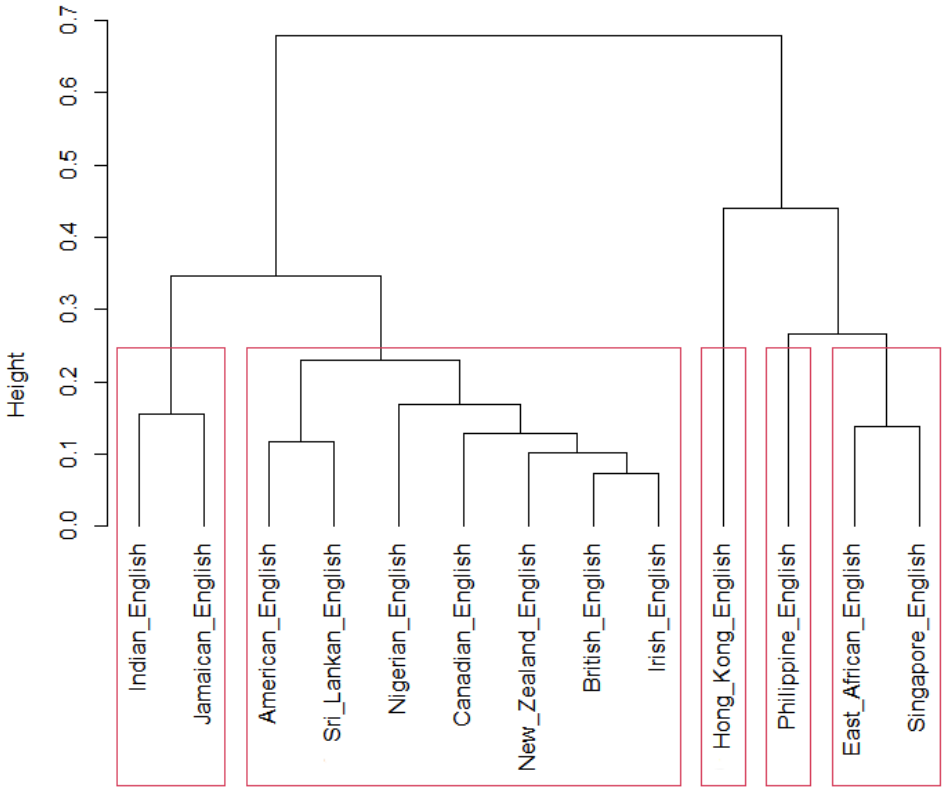

*Fig. 1: Cluster analysis of the behavioural profiles of habitual [*use(d) to *V] in 13 national varieties of English.*

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Special operations: Russian rivalry in cognitive linguistics

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Keywords: Russian, constructions, political discourse

When the Kremlin insists on calling the war in Ukraine a *specoperacija* 'special operation', they resort to a morphological construction with deep roots in the Soviet period. This morphological *spec*-N construction, which involves the formation of a so-called stub compound (Spencer 1991) by adding *spec* to a full or abbreviated noun, competes with the syntactic Adj + N construction, whereby a relative adjective (e.g., *special'nyj* 'special') modifies a noun. While competitions between constructions have received attention in cognitive linguistics in recent years (e.g., Goldberg 2019), competition between morphological and syntactic constructions represents an understudied area (Masini 2019). We analyze the *spec*-N construction as a blend involving emergent structure and compression, and argue that cognitive linguistics as a usage-based, non-modular, and encyclopedic theory of language (Langacker 2008) offers the necessary tools for an adequate analysis of competing morphological and syntactic constructions.

We constructed a database of all attestations of the *spec*-N construction in the Russian National Corpus (www.ruscorpora.ru, non-fiction), as well as all attestations of the competing Adj + N construction. The database contains 424 lemmas, which were annotated manually for several parameters.

We argue that the addition of *spec* to a noun prompts the opening of a blended mental space with an activity that represents an exception from a general pattern. Several subtypes are identified, and it is suggested that their meanings and relationships can be insightfully analyzed as a radial category network.

Our analysis indicates that the competition involves a complex interplay of factors, which can be adequately described in a usage-based model. The *spec*-N construction is more than a shorter version of its syntactic competitor, since the *spec*-N construction involves emergent structure and compression (Fauconnier & Turner 2004) in the same way as prototypical compounds (Nesset & Sokolova 2019). For instance, *specodežda* 'special clothing (for work in a factory)' has a narrower meaning than its syntactic competitor. A non-modular approach where both morphological and syntactic patterns inhabit the same "constructicon" enables us to capture the complex relationships that characterize the competition between the *spec*-N and Adj + N constructions.

We show that the history of the *spec*-N construction goes back to the early Soviet period, when stub compounds appeared in Russian "[i]n an attempt to 'sovietize' the language" (Molinsky 1973: 15). The construction survived the fall of the Soviet Union and has remained productive. While some recent examples have no relation to Soviet realia, ironic uses of the construction suggest that the Soviet connotations are still part of the mental grammars of many language users. We argue that an encyclopedic approach to semantics is necessary in order to capture the rich meaning of the *spec*-N construction which is closely intertwined with changes in Russian society.

Our study illustrates the important role of constructions in political discourse. Insightful analyses can be couched in cognitive linguistics, which posits all the necessary analytical tools.

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„To me, punk is still also a counterculture“ – How can constructions and frames be used to analyse positioning practices in subcultural debates?

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Keywords: frame semantics, construction grammar, positioning theory, punk, feminism

This talk is concerned with the debate on sexism in the punk scene of Germany that began in early 2020 and is still ongoing. It presents a study that focuses on linguistic practices that are employed by speakers in order to specify (or “fixate”) the meaning of an expression. More specifically, the expressions *Punk* and *Feminismus* (‘feminism’) are investigated based on a custom corpus compiled from music magazines, fanzines, blogs, Facebook, and YouTube. It takes a construction grammar and frame-semantic approach to the study of socio-political language use and thus intends to establish a fruitful connection between discourse linguistics and Cognitive Linguistics in theoretical as well as methodological terms.

The following examples illustrate how specific constructions are used to “fixate” specific meanings:

(1) Für mich ist Punk noch immer auch eine Gegenkultur (‘To me, punk is still also a counterculture’)
(2) Feminismus bedeutet für mich in erster Linie das Streben nach Freiheit (‘To me, feminism chiefly means striving for freedom’)

As these two sentences already indicate, the corpus shows a vast variety of patterns or constructions that are used to accomplish this type of statements: besides verbs like *sein* (‘be’) and *bedeuten* (‘mean’) verbs like *gehören zu* (‘pertain to’), *stehen für* (‘stand for’) and *gehen um* (‘be about’) connect the predicated linguistic element (*Punk, Feminismus*) and the predicating linguistic element (e.g. *Gegenkultur, Streben nach Freiheit*). Supposedly, these statements can be seen as instances (or constructs) of semi-schematic constructions, with the latter being considered form-meaning-function-pairings (Östman 2015). For example, (1) is an instance of the construction *NP1_Copula_NP2*.

Meaning and function of the constructs can be described using lexical (semantic) frames (cf. Willich 2022) and pragmatic frames, respectively. Frames are considered conceptual structures defined by frame-specific semantic roles and motivating the understanding and usage of lexical units (Ziem 2008). By drawing on frames, this approach strives for a cognitively plausible account of language use. Reflecting one of the main operations in the conceptual system, some instances from the corpus evoke the `Categorization` frame, viz. if there is an element that is ascribed to (or linguistically constructed as belonging to) a category as in (1): Obviously, there is a set of different countercultures and ‘Punk’ is one of them. But there are a great many cases showing that constructs that are identical in formal terms (because they share the same construction-evoking element, e.g. *be*) do not necessarily evoke the same lexical (semantic) frame (for instance the Categorization frame). This issue and how constructions and lexical (semantic) frames can be mapped in general is one of the issues addressed in this talk.

Moreover, the communicative meaning of the constructs can only be sufficiently described if pragmatic aspects and thus the function of the instances is addressed as well. With recourse to positioning theory (Bamberg 1997, Harré & van Langenhove 1991, Lucius-Hoene & Deppermann 2004) and the concept of stance taking (Du Bois 2007), pragmatic frames are used to account for the fact that a high number of ‘fixations of meaning’ are employed by speakers to position themselves and other members of the punk scene in the debate. But how can positioning practices be modelled in terms of pragmatic frames and which part does the semantics of the predicating linguistic elements play in this regard? These questions represent further issues to be discussed.

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Intra-language variability of path framing and manner encoding

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Keywords: motion events, event descriptions, typology, variability

Typological research can provide insight into the deep and complex mechanisms of languages, although it also risks creating unwarranted generalisations. A case in point is Talmy (1985), who distinguished between verb-framed (henceforth V) languages and satellite-framed (henceforth S) languages, based on how the path of motion is linguistically encoded. While this typology appears suitable from a descriptive point of view, it is well-known that variability exists in how language users frame the path of motion and that some languages adhere less to the typological expectations than others (Slobin 2004). Despite the fact that the distinction between V- and S-languages is not categorical, Talmy's typology has been used in research to predict cognitive patterns (Hickmann et al. 2018), while, historically, little attention has been paid to intra-language variability in path of motion framing. In order to predict cognitive patterns and understand language differences, it is relevant to investigate the relationship between the described situation and the linguistic schema by which it is described, and also how tight the link is between the two.

The present study investigates how well highly proficient users of British English, Castilian Spanish and Swedish adhere to typological expectations in terms of path of motion framing and manner of motion encoding, based on elicited participant descriptions of motion events. Through a survey with video stimuli portraying *directed motion events* (DMs) and *caused accompanied motion events* (CAMs), event descriptions are gathered as data. The stimuli consist of 24 DMs, 24 CAMs and 12 distraction items. The DMs and CAMs systematically vary combinations of four manners and six path types. Two variants of the survey are used, one where the descriptions are made in writing and one where they are voice-recorded. Data is collected through both surveys to see if path framing is expressed differently in speech and writing. Data collection is still ongoing but so far, descriptions were gathered from 87 participants with about 30 from each language group, by sending out links to the survey on various online platforms, image boards and networks. More than 2000 event descriptions were collected, coded and analysed with, and will be further analysed through, entropy computation, Bayesian mixed models, frequency and correlation tests to quantify the non-event related variability.

Preliminary findings show that the event properties are not able to account for variability in path and manner encoding. The Swedish speakers were more consistent in their path framing than Spanish and English speakers, inter- and intra-speaker, both in the written and spoken descriptions. The English speakers showed least consistency in path of motion framing, both inter- and intra-speaker, when describing the events, both orally and in writing. The Spanish speakers reveal inter-speaker variability regarding path framing, but not to the same extent as the English speakers. The CAMs, where manner becomes more obvious in the event, caused an increase in manner encoding for the Spanish speakers. Comparatively, the Swedish and English speakers exhibited no significant change in manner encoding between the event types. The implications for cognitive linguistics research are discussed.

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A formal model of lexicogrammatical individuality

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Keywords: idiolect, linguistic individuality, linguistic unit, Cognitive Grammar, chunking, forensic linguistics, authorship analysis

Individuality in language is an under-researched area of linguistics. Although frameworks of different kinds presuppose the existence of idiolects, the study of why and how individuals are different and/or unique in their lexicogrammatical system is an area that is not well developed. This is a problem for forensic linguists who provide evidence of authorship of questioned documents in a court of law. Despite the significant advances in this field made by computational linguists, the reason for the success of these techniques is unknown. One of the most fascinating and yet unexplained facts is that the frequency of function words can differentiate individuals. In this talk I will present a formal theory of linguistic individuality fundamentally based on cognitive linguistics that proposes an explanation for this phenomenon within a formal architecture based on cognitive linguistic principles. The central argument of the theory is that each individual possesses a unique repertoire of linguistic units, defined following Langacker (1987) as structures that a person can produce automatically. A linguistic unit defined in this way largely corresponds to the cognitive psychology notion of a chunk (Miller, 1956; Gobet et al., 2001), which in turn are traces of memory, predominantly procedural. Usage-based theories predict that these repertoires are different because entrenchment, the process of unit creation, is mostly idiosyncratic (Schmid, 2015; Langacker, 1987; Dąbrowska, 2014). The argument proposed is that the frequency of function words is a statistical representation reflecting these unique repertories. Initial empirical evidence in support of this hypothesis will also be presented in the form of a comparison between two authorship analysis systems, one based on function word frequencies and one on comparison of repertoires of units. This evidence seems to support Langacker's claim that "the set of units mastered by all members of a speech community might be a rather small proportion of the units constituting the linguistic ability of any given speaker" (Langacker, 1987, p. 62).

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Conventionalised Illocutionary Scenarios and Figurative Thought Patterns from the Psychological Schema Constructions in Spoken English

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Keywords: constructions, figurative thought patterns, illocutionary scenarios, spoken corpus

This paper explores *conventionalised* illocutionary scenarios and figurative thought patterns evoked from the psychological schema constructions in spoken English. So far, considering classical and post-Gricean inferential pragmatics, some cognitive linguists (e.g., Baicchi, 2012; Panther & Thornburg, 1998, 1999, 2003, 2009, 2017; Ruiz de Mendoza & Baicchi, 2007; Stefanowitsch, 2003; Thornburg & Panther, 1997) have theoretically reconceptualized and discussed the relationships between constructions and their illocutionary force as pragmatic (metonymic) inferencing from illocutionary scenarios (e.g., *The stew smelled delicious* can be analyzed as a three-layered structure: [Syn: NP1 The stew vcop smelled Adj delicious (to NP2)]-[Sem: PERCEIVE [EXPERIENCER, PROPERTY [PERCEPT]]-[Prag: EXIST [PROPERTY [PERCEPT]]. Specifically, the semantic and pragmatic interface is interpreted as a metonymic link "APPEARNCE FOR REALITY"). Furthermore, such illocutionary scenarios and figurative thought pattens can be evoked from constructions in spoken interaction, where people can share spaces, time, and sequences of conversation (e.g., Deignan et al., 2013; Littlemore, 2015). However, there seem to be a few empirical studies on conventionalised illocutionary scenarios and figurative thought patterns from particular contextually-grounded constructions.

The current study focuses on three psychological schema constructions in Radden and Dirven's (2007) framework, which are often used in spoken interaction (i.e., Emotion/S experiencer+V+O cause, Perception & Cognition/S experiencer+V+O theme, Mental/S experiencer+V+O theme). The procedure of the current study was as follows: (1)randomly selected 1,000 examples of three canonical verbs of three psychological schema constructions (i.e., LIKE, SEE, and THINK) were respectively extracted from the Spoken BNC2014 corpus (Love et al., 2017); (2)all the examples were coded in terms of three-layered coding schemes considering conversational sequences: (a)three psychological schema constructions mentioned above, (b)six tense-aspect-modality (TAM) markers (i.e., present, past, progressive, perfect, modal, semi-modal), and (c)six indirect speech acts (ISAs) (including 126 subcategorization) (vanEk & Trim, 1991); (3)the association strengths between six TAM specified canonical constructions and frequent ISAs were statistically confirmed through collostructional analysis (e.g., Gries, 2015, 2019; Gries, Hampe, & Schönefeld, 2005, 2010; Gries & Stefanowitsch, 2004; Hampe, 2013; Schmidt & Küchenhoff, 2013; Stefanowitsch, 2013; Stefanowitsch & Gries, 2003); (4) conventionalized illocutionary scenarios and figurative thought patterns evoked from the strongly collostructional patterns were extracted respectively.

As a result, the following three tendencies were confirmed: (1)the Emotion/S+V LIKE+O construction tended to be related to personal information (wants/desires) imparting-related ISAs in explaining, inquiring, and complaining, advising, requesting, anecdote telling illocutionary scenarios (e.g.,WANTS/DESIRES FOR PERSONAL REPORTING (REQUESTING)); (2)the Perception & Cognition/S+V SEE+O construction tended to be related to not only past personal experience imparting-related ISAs, but also present information (including obligation) imparting-related ISAs and future plan (intentions and ability) imparting-related ISAs with explaining, inquiring, complaining, anecdote telling illocutionary scenarios (e.g., VISUAL EXPERIENCE FOR REPORTING (PROMISING)); (3)the Mental/S+V THINK+O construction tended to be related to personal stance (certainty and probability) expressing-related ISAs with explaining, inquiring, complaining, advising, and anecdote telling illocutionary scenarios (e.g., CERTAINTY (PROBABILITY) IMPRESSION FOR PERSONAL STANCE TAKING).

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A monosemic analysis of the form *through*

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Keywords: Prepositions, Semantics, Monosemy, Discourse Analysis, Conceptualization

The preposition *through* has been described as a polysemous word (Dirven 1993; Lee 1998, 2001; Hilferty 1999; Tyler & Evans 2003; Evans & Tyler 2004; Benom 2015; Gilquin & McMichael 2018; Dixon 2022). However, it has also been recognized that "not all contextually varying uses of a form constitute distinct senses" (Tyler & Evans 2003:38). Building on that view, in this presentation I will describe an analysis where the distribution of *through* in discourse is explained by positing a single invariant meaning (Novotny 2022). My proposal is grounded in the Columbia School perspective that language is a code consisting of signal-meaning correspondences, which are creatively deployed by human beings for communication (Diver 1975/2012, 1995; Huffman 2001, 2006; Davis 2004; Stern 2019).

I begin with the hypothesis that *through* makes the same semantic contribution in all its uses; it signals SUCCESSION OF POINTS IN A THREE DIMENSIONAL SPACE. All other communicative specifications that are sometimes associated with its use, such as movement, continuity, and extension from an entry point to an exit point, are the result of inferences that language users can make, as appropriate, based on the relevant linguistic and extralinguistic context. For example, in "… the ancient tub with the claw feet and the rust stains running *through* the cracked porcelain, …" [Auster 2017], the rust stains do not move at all but are rather statically deposited in the space of the cracks (and no entry or exit points are involved). In "…she had to step over the sleeping or nursing or snoring bodies scattered *through* her house" [Morrison 2012], not only is there no movement or entry/exit points involved, but there is no continuity either (as evidenced by the use of *scattered*).

My study is based on a corpus of six contemporary American novels, and relies on qualitative and quantitative techniques. As a first step, I provide qualitative explanations for the use of *through* in a variety of contexts, both concrete and abstract. Furthermore, I contrast contexts where *through* is used with comparable contexts in which another form is employed (*along*, *across*, *over*, or *during*).

As a second step, I conduct quantitative analyses to test predictions that certain contextual elements will favor (or disfavor) co-occurrence with *through* as compared to another form. To illustrate, after examining the use of *through* and *over* in pairs such as "and then bit by bit the weight turned inward and was supplanted by horror, horror crawling up *through his body* and humming in his veins" [Auster 2017] vs. "Ferguson could run cool washcloths *over Amy's naked body*" [Auster 2017], I predict that *through* will occur more frequently than *over* in contexts where mention of the body relates to feelings or thoughts, because feelings and thoughts tend to be conceptualized as happening inside the three-dimensional space of the body. This prediction is confirmed, as shown in Table 1.

	through + body		*over* + body	
	N	%	N	%
feelings or thoughts present	8	66.7	4	33.3
feelings or thoughts absent	20	22.7	68	77.3
OR 6.80				

Table 1: Through *and* over *with body parts*

Both qualitative and quantitative findings support the analysis of *through* as a monosemous sign. The hypothesized meaning SUCCESSION OF POINTS IN A THREE DIMENSIONAL SPACE successfully accounts for the distribution of *through* in the corpus, showing that a clear line can be drawn between the stable semantic contribution of the form and its context-dependent interpretations.

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How to Do Thing "with an elbow" —A Constructional Approach to Adjuncts—

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Keywords: Construction grammar, Frame semantics, Web corpus, Adjuncts

While diverse constituents of a sentence contribute to the meaning of the sentence differently, verbs have generally been considered to have a strong influence, as indicated by the special attention paid to verb-centered constructions in construction grammar (cf. Goldberg, 1995; Corft, 2003). This study examines how adjuncts (i.e., prepositional phrases) in English contribute to the meaning of sentences from the perspective of frame semantics and construction grammar. We argue that adjuncts can semantically make a significant contribution depending on the semantic properties of nouns occurring in them.

In this study, 2,157 cases of the adjunct, "with an elbow" in English Web (2013) (Jakubíček et al., 2013) are analyzed in terms of the verbs which co-occur with it and the meaning of the sentences with the adjunct. As a result, three observations were made.

(a) Compared to adjuncts with other body-parts names, such as "with a hand", the type frequency of co-occurring verbs of "with an elbow" is fewer, and the meaning of the whole sentence tends to be more aggressive. The limited use of an elbow in the real world (usually specialized for professional wrestling or martial arts) may limit the verbs that co-occur with this adjunct.

(b) As shown in (1), the original meaning of the verb (i.e., WELCOMING) can be overwritten by "with an elbow". Although the verb "welcome" in (1) refers to a friendly interaction among people, the whole sentence refers to a form of attacking due to the presence of "with the elbow". This "overwriting" phenomenon may indicate that the semantic property of this adjunct is strong enough to topple the semantic influence of verbs.

(1) "He welcomed me with an elbow in the chops," Glover told the Kitchener- Waterloo Record in a 2017 interview.

(c) As shown in (2), there are numerous instances where "with an elbow" is used without a verb and performs essentially the same predicative function as a verb. In (3), a sentence containing "with an elbow" without a verb is in coordinating conjunction with a sentence containing a verb, indicating that this adjunct performs a verb-like function. This kind of usage is not found in the adjunct "with a hand".

(2) Jones with an elbow to the back of the head.

(3) Jorgensen with an elbow and Gamburyan gets a takedown.

Based on these findings, we argue that verbs do not necessarily play a central role in constructing the sentence meaning and that even adjuncts can contribute to the same degree as verbs, depending on the nature of the nouns contained in them. The nature of nouns and their semantics should be captured in terms of frame semantics (cf. Fillmore et al., 2003). We also argue that descriptions of constructions need not be verb-centered but that the core parts of constructions should be selected according to the degree of their contribution to the meaning of the sentence. Like Goldberg (2006), we treat frequent and conventional patterns in language that convey structured meanings as constructions, which does not necessarily rely on word classes of their constituents. This "word-class-neutral" approach to constructions accords well with the Langacker's symbolic view of grammar (cf. Langacker, 2008).

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Multimodal markers of confidence and doubt: Inferring Feeling of Knowing from facial movements

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Keywords: Feeling of Knowing, facial expressions, multimodality, pragmatics, confidence

Questions are essential to gain information and mutual understanding (Clark 1996). When answering questions, people often express a degree of confidence or doubt—called Feeling of Knowing (FoK). A large body of work shows that observers use speech cues to infer FoK (e.g., *uhm* or *maybe*; Caffi & Janney 1994; Jiang & Pell 2017; Goupil et al. 2021; Goupil & Aucouturier 2021). However, it remains unknown whether FoK can also be inferred from nonverbal signals, like facial expressions, that are often used for similar pragmatic functions in conversations (Bavelas & Chovil 2018). Are there specific facial movements that signal confidence and doubt when paired with a spoken answer? And if so, are facial expressions of confidence and doubt culturally variable, as emotions are (e.g., see Jack et al., 2012)? We address this question using a data-driven approach to agnostically generate different facial movements and measure their impact on speaker's perceived confidence or doubt while answering a question. We recruited participants from two cultures with known differences in facial expression perception—Western European and East Asian (N = 22 per culture; Age = 18-35 years, sex-balanced). We constructed multimodal stimuli of speaker's answering a question (i.e., *yes* or *no*) by displaying random combinations of eye/brow facial movements (e.g., AU1-2 Inner & Outer Brow Raiser, AU5 Upper Lid Raiser, Ekman & Friesen, 1978) on different face identities using a generative model of dynamic 3D faces (Yu, Garrod & Schyns 2012) and lip-synchronized recorded utterances using a neural network (Cudeiro et al., 2019). We recorded speech from two Scottish English and two Mandarin native speakers (1 male, 1 female) and created 20 distinct sounding voices by shifting the pitch and spectral envelope. We then paired these with unique face identities on each trial (1800 trials per participant, sex-balanced, same-ethnicity faces). We synchronized the onset of the words *yes* or *no* (fixed at 1s) to the peak of the facial movement. On each trial, participants viewed a question ("Would they make a good leader?") before viewing a speaker answering the question (*yes* or *no*). Participants then rated the confidence of the speaker's answer on a 5-point scale from 'Very doubtful' to 'Very Confident.' To examine whether facial movements influenced participant confidence ratings, we used ordinal logistic regression models with a logit link. Results showed that specific facial movements mark confidence and doubt—participants consistently associated doubt with squinting (e.g., AU6 Cheek Raiser, AU7 Lid Tightener) and frowning (AU4 Brow Lowerer; see also Swerts & Krahmer, 2005) and often associated confidence with raised eyebrows (AU1 Inner Brow, AU2 Outer Brow Raiser) and closed eyes (AU43 Eyes Closed), reflecting existing work showing that long blinks signal understanding (Hömke, Holler & Levinson 2018). Together, our data-driven approach to understanding the role of facial expression in multimodal pragmatics revealed that specific facial movements modulate the perception of confidence and doubt from otherwise neutral speech. Our results will form the basis of new research directions involving the manipulation of both vocal and visual cues to systematically examine how these modalities interact and combine in face-to-face dialogue.

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Signs are constructions

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Keywords: Cognitive Construction Grammar, ASL, constructional types, analogy, signed languages

Within construction grammar as a branch of cognitive linguistics, there is some debate about the status of single words in grammatical knowledge (e.g., Michaelis 2019, Goldberg 2019); are they also considered constructions? Moreover, within signed language linguistics, a structuralist division is often made between a "native" versus "non-native" lexicon, with the native lexicon including a further division between "core lexical" signs and "classifier" polymorphemic predicate signs (Brentari & Padden 2001). In both the construction grammar literature and in the sign linguistics literature, there is a question about how to best analyze the identifiable structure within words as single units.

We propose that by taking a Cognitive Construction Grammar approach, "lexical" signs can be viewed as constructions, and the variation of formal properties between signs analyzed as degrees of schematicity versus specificity. Focusing on formal and functional overlap among ASL signs, we identify families of constructions (Goldberg 2006, Bybee, 2010, Anible and Occhino 2014, Croft 2022) which have shared fixed parameters and variable schematic parameters.

Working with ASL examples collected from open online sources (Hou et al. 2020), we look at three constructions involving the two hands interacting. We identify a “transitive construction” which includes the signs PICK.ON and REMIND (Figure 1) that share a non-dominant handshape representing an argument of the verb (Dudis 2004, Janzen et al. 2001). In this sign the non-dominant hand is phonologically fixed. We also identify a “reciprocal construction” which includes the signs CHALLENGE and MEET (Figure 2) (Lepic et al. 2016, Lepic and Occhino 2018), in which the symmetrical movement of the dominant and non-dominant hands profiles the symmetrical interaction of two co-agents. In this sign, the hands share a phonological configuration, but the handshape value is itself schematic. We also observe degrees of schematicity in constructions: signs like WRITE and READ (Figure 3) represent a sub-family of transitive construction signs in which the non-dominant hand is a fixed handshape that depicts a flat written surface, a highly specified patient serving as the goal of the action.

Under this analysis, we view "lexical" signs as constructions with schematic internal structure. Instances of these signs reflect form-function mappings, and the constructions themselves are related to other larger families of constructions on the basis of these shared aspects of form and function. In this way, a construction-based approach leads to a uniform analysis of "monomorphemic" and "multimorphemic" signs. Rather than categorizing lexical signs as separate in kind from classifier constructions (or even categorizing "lexemes" as separate in kind from "grammatical constructions"), we suggest that grammatical knowledge exist on a continuum on which sign units form a network based on the degree to which they share fixed or schematic constructional slots.

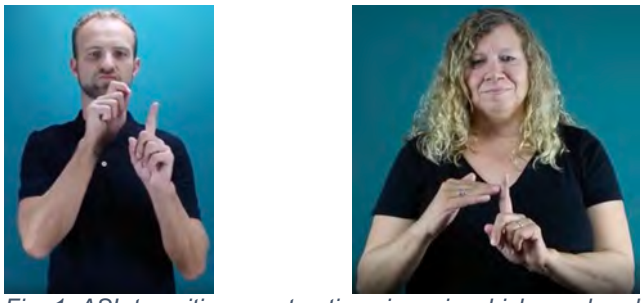

Fig. 1: ASL transitive construction signs, in which one hand acts on the other: PICK.ON and REMIND (all images from https://aslsignbank.haskins.yale.edu/)

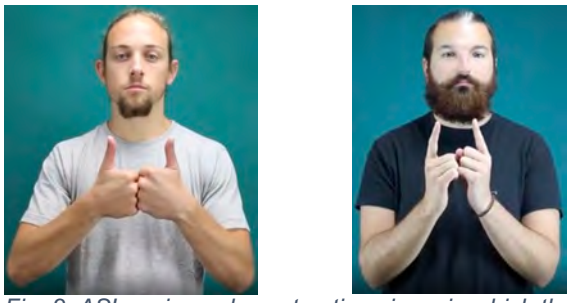

Fig. 2: ASL reciprocal construction signs, in which the hands move symmetrically: CHALLENGE and MEET

Fig. 3: ASL patient construction signs, in which one hand depicts a 'written surface': WRITE and READ

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Conceptualization as semiotic modeling

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Keywords: semiotic modeling, cognition, sociosemiotic commitment.

This paper proposes the adoption of the notion of modeling from semiotic systems theory (Sebeok, Danesi 2001) in the scope of cognitive linguistics. In this specific semiotic vein, modeling is understood, broadly, as the interpretative process of constructing meaningful worlds by the channeling of capacities to interpret towards the representation of some referent. Construing all conceptualization as modeling allows for a differentiation of conceptualization types according to the specific types of signs employed, from simple images to symbols, propositions and complex arguments.

The three levels of modeling systems that Sebeok and Danesi (2001) identified from a semiotic perspective are discussed in relation to cognitive models (Lakoff 1999), as identified in cognitive linguistics. This follows Geeraerts' (2016) argument that in cognitive linguistic scholarship the cognitive commitment should be complemented by a sociosemiotic commitment. This means that while the concept of *language* must be in accord with a state-of-the-art understanding of *mind* and *the brain*, it must also be acknowledged as intersubjective, socially variable and transcending the individual. Even though, at a close look, the latter is observed to stem from the former, more work can be done to bridge the enduring gap in the humanities between cultural and cognitive approaches. To this end, semiotic systems theory is employed to discuss cognition as unfolding through three types of modeling systems, roughly identified as nonverbal, linguistic and supralinguistic. On this account, all linguistic modeling is deemed to rely on nonverbal capacities to organize meaning. As such, complexity of meaning is not seen to parallel complexity of cognition. Complex interpretations (e.g., propositions, arguments) may not require strenuous cognitive efforts, as well as *vice versa*. In inspiration of Stjernfelt (2014), I argue that this leads to a view on modeling as the cognitive work to decompose complex into simple signs, which can then be recomposed into new structures of meaning. This perspective contributes to the effort in cognitive linguistics to undermine classical humanistic assumptions about the centrality of language for thought while maintaining, in contradiction to mainstream views in cognitive linguistics, that propositions are basic structures for conceptualization. The key lies in understanding propositionality as multimodal, not as (necessarily) linguistic structure.

I conclude by explaining how this perspective opens interdisciplinary dialogue possibilities for cognitive linguistics with recent developments in social semiotics, cognitive semiotics and enactivism (Paolucci 2021).

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Grounding in Igbo Grammar: A Cognitive Linguistics Approach

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Keywords: Grounding, Reference, Communication, Cognitive Linguistics

Grounding is a term used by Radden & Dirven (2007) to refer to the concept of reference. In a bid for speakers of a language to communicate effectively, we try to create the same instance we have in mind in the mind of our co-interlocutors also. This we achieve through 'grounding' the information we intend to pass by the means of referring expressions. This work examines the applicability of this concept to Igbo language data. The data is a radio programme recorderd on the 9th of November from Bliss FM 91.5 titled "Gọọmentị etinyego anya n'ihe gbasara ịpịa ụmụ aka ụtarị n'ụlọ akwụkwọ." The approach adopted is the cognitive linguistics perspective as used by Radden & Dirven (2007). The researcher's decision to use a natural language data among speech interlocutors is in a bid to ascertain if these types of references could be seen in real conversation. The programme consists of 6 speakers designated A-F. While speaker A is the anchor of the programme, speakers B-F are the different callers that participated in the conversation.

The data was analyzed with the aim of discovering if the sixteen (16) types of reference identified by Radden & Dirven's (2007) hypothetical English examples can be applicable to Igbo natural language data. This was however achieved despite the difficulty the researcher faced in analyzing the types of reference in Igbo since there is no one to one correspondence between English and the language under study (Igbo). From the analysis, we have been able to identify the sixteen (16) different types of reference in the Igbo language. It was discovered that even though Radden & Dirven (2007) uses hypothetical data in their description of these types of reference, the types are also obtainable in natural language as can be seen in the analysis.

This work therefore concludes that reference can be grounded in the Igbo language, not just by using referring expressions such as the determiners, demonstratives adjectives and numerals as the other researchers have pointed out, but also through different expressions as classified in the analysis of this work. However, we recommend that there is need for language scholars, precisely linguists to show more interest in the concept of grounding since it is an important aspect of speech communication.

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Gesture mimicry in teacher-student interaction: A study on office hour consultations

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Keywords: gesture mimicry, interactive alignment, teacher-student interaction, multimodal alignment.

Alignment between speakers occurs at different semiotic levels during dialogue (Oben & Brône, 2016). Bodily mimicry, specifically, has shown to have effects on communication. The mirroring of movements and postures seems to influence the liking of a partner or the degree of smoothness of an interaction (Chartrand & Bargh, 1999). Within the classroom, studies on nonverbal mimicry have highlighted the social effects of alignment by linking the phenomenon to rapport (Bernieri, 1988; LaFrance & Broadbent, 1976). Mimicked gestures, which are "highly similar in their form and in the meaning they depict" (Holler & Wilkin, 2011, p. 139), might be copied by teachers or students in order to fulfill different functions during classroom interaction, such as maintaining mutual understanding (Holler & Wilkin, 2011), sustaining common ground (Kimbara, 2006), and creating teaching and learning opportunities (Majlesi, 2014). Contextual factors, such as social roles, have proven to have an impact in these phenomena. We studied gestural mimicry in a specific type of teacher-student interaction: office hour consultations between university lecturers and undergraduate students. Using ELAN, we annotated 27 naturally occurring conversations involving Spanish students who were participating in the ERASMUS student exchange program in four European countries (Ireland, England, Sweden, and The Netherlands). All the conversations were held in English and lasted an average of 10 minutes. We sought to describe the patterns of gesture mimicry in these educational settings; to determine the directionality of the phenomenon (i.e. are students copying teachers or are teachers copying students?); and to understand the temporality of these instances (i.e. do these instances happen in a simultaneous, consecutive, or later manner?). The annotation system also considered the form features and function of these gestures. Previous research has tended to focus on representational gestures, that is, gestures depicting "aspects of an entity, action, or relation" (Cienki & Müller, 2008, p. 485). However, we also included gestures with pragmatic functions (Bressem & Müller, 2014), and deictics (McNeill, 1992).

After performing a qualitative and quantitative analysis, results show that mimicry occurs on most occasions in a consecutive manner within a 10-second window. At the same time, there is a difference between gesture functions: while representational gestures are associated with the technical content of the consultation, pragmatic gestures express the mutual understanding of participants. Kimbara (2006) has previously argued that gesture mimicry could be related to the propositional content, but also to pragmatic functions. The latter provides evidence for the relevance of gesture mimicry in educational contexts, where teachers and students are constantly negotiating pedagogical content. Finally, there is no significant difference in the directionality of the mimicry. However, students copy the teachers' gestures to express understanding or to elaborate an idea previously introduced. We also discuss the cases of multimodal alignment, where lexical and gestural mimicry take place at the same time.

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A crosslinguistic corpus-based study of the "construction proper" vs "patterns of coining" distinction

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Keywords: patterns of coining, constructions proper, continuum, corpus-based approach

One of the hot topics in constructionist approaches to the study of language is which traits are to be considered essential to posit a construction, as can be attested in the wide range of definitions that have been put forward when stating how a construction looks like (compare the definition of "construction" in redundant models such as in Goldberg (2006) and complete-inheritance models such as in Fillmore (2002)). In this respect, proponents of complete-inheritance models such as Kay (2013) draw a clear-cut distinction between "construction proper" and "pattern of coining", the latter corresponding to the sphere of coining. This means that these patterns are used to coin new units based on analogy with an existing one, lack full productivity and should therefore not be considered constructions (see "coining" vs "generating" in Fillmore 2002).

Against this background, I depart from the assumption that the frontier between "proper construction" and "pattern of coining" is rather blurred, and speakers cannot know without experimentation whether each string is learnt individually and whether speakers are likely or not to build new expressions analogized to these patterns (see Desagulier 2016, Ivorra Ordines 2022). With a corpus-based methodology, I am at scrutinizing the proper-construction – pattern-of-coining continuum by means of apparently lexically filled proverbs which may undergo constructionalization on the basis of the lexical substitution of certain lexical items (analogical extensions).

With instances of proverbs in Spanish and their functionally counterpart in English from the esTenTen18 corpus and enTenTen13 corpus (Sketch Engine), I examine the productivity and schematicity of these patterns by means of the role of high token frequency in the postulation of analogical extensions (productivity as extensibility) and of semantic connectedness in the distribution/clustering of the types (productivity as regularity). Some examples are showed below:

(1) Yo por mi parte he aprendido la lección: *Más vale dividendo en mano que ciento volando*. (esTenTen18, 1544378706)

(2) The only time this principle didn't work is when Americans got it mixed up. Instead of "*A bird in hand is worth two in the Bush*", they understood it as "A vote in hand is worth two Bushes in office". (enTenTen13, 4266626736)

(3) Por los alimentos y comidas que prefiere cada cual pueden descubrirse muchas cosas (*dime lo que comes y te diré quién eres*). (esTenTen18, 88211686)

(4) *A man is known by the quotations he keeps*. (enTenTen13, 1219708248)

(5) Recuerda bien: *una mosca no hace verano*, ni el caso que tú puedas conocer, si es que conoces alguno, te permite generalizar. (esTenTen18, 1217140098)

(6) As the saying goes: "*One warm day in April does not make a summer*..." and one lone Pinnacle Award from 1998 does not make a great salesperson. (enTenTen13, 251181998).

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A cognitive sociolinguistic study of prepositional complements of prepositions in English

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Keywords: Prepositional complements of prepositions, Irregular constructions, Search domain, World Englishes, The GloWbE corpus

This presentation aims to discuss how prepositional complements of prepositions (hereafter, PCOPs) (e.g., *from under the table*, *from within the company*, and *until after his death*) are used in twenty English dialects from a cognitive sociolinguistic perspective. Though prepositions generally take a nominal complement, as in *at the door* and *on the desk*, they also take prepositional phrases as their complements (Quirk et al. 1985; Huddleston & Pullum 2002).

In previous studies, the nominal use of prepositional phrases was mainly discussed in terms of the prepositional subject (Jawarska 1986; Langacker 1990) (e.g., *Beside the fire* is warmer) while little attention has been paid to PCOPs. However, my previous research included a comprehensive study of PCOPs (e.g., [[$PREP_1$] [$PREP_2$ NP]]) in the *British National Corpus*, revealing that various PCOPs are observed when *from* appears in the $PREP_1$ slot, as in *from {behind, within, under, outside}* NP. It also demonstrated that (i) *from* is generally followed by non-prototypical prepositions that have more than one syllable (*At*, *for, in, on*, and *to* don't follow *from*), and (ii) the $PREP_2$ can be functionally classified into two types: the emphatic type and the search domain type (see Langacker 1990):

(1) Emphatic type
  (a) The project team was chosen from *(within) the company*.
  (b) We collected samples from *(throughout) the UK*.
  (c) The head was elected from *(among) the members*.
(2) Search domain type
  (a) Something had crawled from *under a stone*. (BNC: CA3: 742)
  (b) Just then the moon came out from *behind a cloud*. (BNC: H9U: 1748)
  (c) … he heard shots from *across the road* … (BNC: K6G: 11)

In the emphatic type, the regions illustrated by the noun phrase (underlined) and the $PREP_2$ phrase (italicized) correspond. That is, the second preposition can be omitted without changing the propositional content of the whole sentence. The function of $PREP_2$ is to emphasize the region that is illustrated by the noun phrase. In contrast, in the search domain type, the regions illustrated by the noun phrase (underlined) and the $PREP_2$ phrase (italicized) do not correspond. The $PREP_2$ refers to the search domain where the target is found.

Following previous studies, this study discusses how various PCOPs headed by *from* are distributed in English dialects with the GloWbE corpus, which consists of 1.9 billion words from twenty English-

speaking countries. The study investigated (i) the distribution of the major patterns of PCOPs that appear more than 1,000 times in the corpus (Table 1) and (ii) typical nouns appearing in PCOPs (Table 2). The results include the following: First, the degree of entrenchment of each PCOP is far from consistent among the twenty dialects, though some subgroups that show similar distributions can be identified (e.g., countries in the inner circle and in South Asia). Second, some PCOPs (e.g., *among(st)*) are strongly entrenched only in a few dialects, though most PCOPs are observed in various dialects. Third, some PCOPs are more associated with English in the outer and expanding circles such as *from* {*within*, *outside*, *before*, and *among*}, while others (e.g., *from under*) are more associated with that in the inner circle. Fourth, typical NPs of PCOPs sometimes differ in different dialects.

Overall, this presentation demonstrates the inconsistent distributions of PCOPs among various dialects, providing the basic data for further cognitively oriented sociolinguistics research (Geeraerts, Kristiansen and Peirsman 2010) including on the different distributions of the two types of PCOPs – and the constructional polysemy of each PCOP – among dialects.

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Corpora

BNC: British National Corpus (Available at http://www.corpora.jp/~scn/bnc.html?page=top)

GloWbE: Corpus of Global Web-based English (Available at https://corpus.byu.edu/glowbe/)

Table 1: The distribution of PCOPs among 20 English dialects

	Frequency	US	CA	GB	IE	AU	NZ	IN	LK	PK	BD	SG	MY	PH	HK	ZA	NG	GH	KE	TZ	JM
from around	20996	3605	1612	4493	1108	1760	1262	986	499	380	444	516	441	325	631	535	290	434	558	674	443
from within	15607	2888	991	3077	818	1228	778	1084	566	604	357	282	377	287	319	371	347	310	380	291	252
from outside	13662	1824	958	3055	964	833	500	1110	467	450	380	245	303	241	325	272	364	376	400	373	222
from across	11460	1651	1169	2913	583	690	367	836	216	373	206	207	170	137	159	295	235	317	344	280	312
from behind	10449	2168	828	2486	581	759	382	423	226	421	186	190	271	183	155	260	229	178	206	131	186
from among	5770	820	344	612	157	198	114	308	272	1317	218	65	163	190	121	127	178	157	143	144	122
from over	5595	920	375	1275	324	391	242	280	129	103	108	167	130	111	163	141	84	165	214	137	136
from under	5582	1496	417	1256	355	460	274	207	90	107	66	88	83	99	70	112	79	74	70	64	115
from before	2540	601	184	595	130	189	100	87	29	107	34	80	58	39	47	51	30	30	42	43	64
from amongst	1569	73	31	203	39	54	29	149	67	548	67	16	119	13	20	32	20	7	23	45	14
from beyond	1137	332	81	237	62	73	46	49	14	30	26	14	15	60	14	13	14	14	14	19	10
from between	1130	202	95	267	71	81	53	42	24	41	36	18	18	18	31	26	26	12	21	19	29
from down	1056	227	84	226	83	115	51	30	34	44	15	12	15	20	15	18	9	7	12	13	26
from beneath	1020	188	76	262	61	90	60	34	16	40	17	14	12	13	19	12	14	19	26	24	23

*The darkness of the blue color shows the degree of entrenchment of the PCOP in each dialect.

Table 2: Typical NPs within PCOPs

#	PCOP	Typical NPs	5	from behind	cloud, desk, counter, door	10	from amongst	number, members, workers
1	from around	world, Europe, neck	6	from among	a number of people, member	11	from beyond	grave, wall, mountain
2	from within	program, party, community	7	from over	boarder, horizon, shoulder	12	from between	10am and 4pm, teeth
3	from outside	university, interference	8	from under	feet, nose, nail, brow	13	from down	river, road, valley
4	from across	World, Europe	9	from before	century, war, birth	14	from beneath	lash, tree, bed

Traceback as a method for exploring usage-based second language acquisition.

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Keywords: Usage-based language acquisition, Second language acquisition, Traceback

Usage-based theories of language acquisition have recently been gaining traction, with several studies demonstrating the fruitfulness of this approach. One method that has been used to explore usage-based (first) language acquisition has been labelled traceback. The main principles of traceback are that (1) in order for a usage-based framework to hold, all utterances produced by a developing language user should be traceable to the input they have heard and/or to their own previous utterances and (2) learners will create new utterances by productively generalising from the input (e.g. Lieven et al. 2003). The criteria used to determine whether utterances can be traced back varies from study to study, particularly concerning the types of available slot fillers and the operations used as a basis for forming the learner's utterances from their previous language experience (see Hartmann et al. 2021 for an overview of existing traceback studies).

Koch (2019) presents a version of the traceback method in which five slot types (REFERENT, PROCESS, ATTRIBUTE, LOCATION, and DIRECTION) and three operations (SUPERIMPOSE, SUBSTITUTE, and ADD) are included. As with previous traceback studies, it is designed to analyse first language acquisition data. The present study applies an adapted version of the traceback procedure used by Koch (2019) to second language acquisition data. Specifically, the Welsh language learning programme SaySomethingIn (SSi) is used as a case study. This programme follows a broadly constructionist approach by introducing learners to chunks of speech and encouraging them to produce new utterances by combining and generalising what they have already heard. In this study, transcripts of SSi are used to explore how the traceback method might be adapted to second language acquisition. The findings will be applied to elicited production data from a small group of participants (2-4) who have taken the programme for one month to verify the method and to discover firstly to what extent second language learners' language can be derived from the input they have heard, and secondly whether the participants have created new utterances through generalisation. From the results, the extent to which usage-based theory is applicable to second as well as first language acquisition will be discussed.

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Title.
Cognitive iconicity: A corpus-based analysis of the positioning of adverbial clauses in Persian

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Keywords: Adverbial clauses, Cognitive iconicity, Corpus analysis, Persian

Previous research in cognitive linguistics has reported evidence that the ordering of main and adverbial clauses is determined by cognitive forces from syntactic parsing, semantics, and discourse pragmatics (Diessel 2005; 2008). Following this line of research, the present study investigates the effect of the iconicity principle on the positioning of Persian adverbial clauses. The principle of iconicity predicts that the linear ordering of the dependent/subordinate and independent/main clauses mirror the sequential conceptual ordering of events they refer to in real life (Ungerer & Schmid 2013). The present study is based on extracted data from the TalkBank Persian corpus (Rasooli, Kouhestani & Moloodi 2013) on Sketch Engine (Kilgarriff, Rychlý, Smrž & Tugwell 2014). The TalkBank Persian corpus consists of 474,773,547 words compiled from various Farsi blog posts1. The corpus is tagged using Persian Syntactic Dependency Treebank (Rasooli, Kouhestani & Moloodi 2013). I randomly selected 50 temporal ADV-clauses with baad az inke (after) and 50 with ghabl az inke (before), 50 causal ADV-clauses with chon ke)since/because), 50 ADV-clauses of manner with tori ke (so that), 50 conditional ADV- clauses with agar, 50 ADV-clauses of result with bana bar in (therefore), and 50 ADV-clauses of purpose with baraye inke (for/with the purpose of). The aforementioned subordinate conjunctions in Persian were chosen based on their high frequency and semantic relevance to the current research. All the total 350 tokens were manually annotated for two features: First, the linear order of the adverbial clause compared to the main clause (initial/final), and second, the conceptual order of the adverbial clause with regard to the main clause (prior/posterior). The results revealed that Persian ADV clauses are mostly iconic, and temporal clauses with baad az inke (=after), adverbial clauses of result, and conditional adverbial clauses are the most iconic ones in Persian. Additionally, ADV clauses of manner displayed a high level of iconicity. The least iconic ADV clauses; however, are temporal ADV clauses with ghabl az inke (before) and causal ADV clauses.

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A Constructicon for Ukrainian: Objectives, Strategies, Results

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Keywords: construction grammar, construction, Ukrainian

We report on a project to build a distinct linguistic resource to promote the Ukrainian language in general and empirical data on Ukrainian multi-word constructions in particular: the Ukrainian Constructicon (UkrCon, https://constructicon.github.io/ukrainian/, currently under construction). This is an open-access free digital database of Ukrainian constructions that are described and illustrated for the benefit of linguists, second language learners, and software applications for automatic translation.

We adopt the constructionist approach (Croft 2001, Goldberg 2006) and view constructions as central units of language structure and language description. We follow Construction Grammar in understanding constructions as pairings of form and meaning (or function) learned in the process of language use (Goldberg & Herbst 2021). The project entails constructicography research (Fillmore et al. 1988, Lyngfelt et al. 2018), where the term c*onstruct-i-con* refers to both a structured repertoire of constructions in a language and a description of this repertoire and its organization.

The Ukrainian Constructicon focuses primarily on multi-word recurrent patterns of phrases and sentences characteristic of the Ukrainian language, such as:
(1) *čas vid času VP* 'do something occasionally' [literally: "time from time do something"];
(2) *nivroku Pron-Dat* 'not to wish someone anything bad' [literally "no eye to someone"];
(3) *anitrišky/anitrohy ne VP/Adv* 'do not do at all' [literally: "in no way do something"]
(4) *zaive kazaty/pevna rič*, *ščo Cl* 'it goes without saying' [literally "it is taken for granted"].

In this talk we 1) explain how we have progressed from the idea to the product and 2) contribute to the discussion of what the most efficient methodology for collecting and analyzing constructions might be. As opposed to existing constructicons, UkrCon is the first to systematically compare construction-mining methodologies: analysis of full authentic texts vs. searching for equivalents to constructions in other languages vs. analysis of most frequent word combinations and sequences attested in corpora (bigrams and trigrams).

The constructicon entries in UkrCon are based on the General Regionally Annotated Corpus of Ukrainian – GRAC and the Corpus of the Ukrainian Language – Mova. UkrCon is built upon comparison and contrast with the Russian Constructicon, and likewise departs from a strict FrameNet approach, following instead a bottom-up data-driven approach.

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On the (non)rareness of egocentric spatial encoding

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Keywords: spatial language; frames of reference; egocentric encoding; sociotopography

It is widely held that numerous languages do not encode egocentric extrinsic spatial frames. E.g. Majid et al (2004) classify 30% of surveyed languages as lacking relative, the best-known egocentric frame. Egocentric extrinsic frames are perspective-dependent involving a third argument (viewpoint/observer) in addition to figure and ground. In relative frame, pseudo-intrinsic facets such as front and back are assigned to a ground: (1a) assigns a 'front' facet with reference to the location of viewpoint. Less well-known, the observer-landmark frame (Palmer et al. 2022; Polian & Bohnemeyer 2011:878; Romero-Méndez 2011:930–933) assigns to the ground facets towards or away from an observer: (1b) projects a domain off the facet closest to the observer.

A significant minority of languages, particularly Australian and Meso-American, have been treated as lacking egocentric encoding due to a claimed absence of relative frame, particularly on the transverse (left-right) axis. However, while not displaying a differentiated transverse, most do display relative on the sagittal (front-back) axis. E.g. Warrwa is described as not encoding relative frame (Levinson & Wilkins 2006b:542,545,567; Majid et al 2004:112; McGregor 2006:148,156), but does encode relative on the sagittal (McGregor 2006:130; Palmer et al 2022) (2a-b). It also encodes an undifferentiated transverse axis (2c). Both facts reflect a general weaker transverse human asymmetry evident in later acquisition of the transverse (Shusterman & Li 2016), difficulty in left-right discrimination among adults (van der Ham et al 2021), and lower transverse frequencies in languages encoding it (Palmer 2021). The traditional relative typology (Levinson 2003:84–89) treating sagittal and transverse as a unitary system cannot classify languages only encoding one axis, such as Warrwa, prompting a new typology separating the two axes (Palmer 2022; Palmer et al 2022). This paper presents data showing relative on the sagittal in five of Majid et al's (2004) six languages classified as lacking relative: Warrwa, Central-Eastern Arrernte, Tenejapan Tzeltal, Mopan, Totonac. The few Australian languages not encoding relative even on the sagittal employ egocentric encoding of the observer-landmark type, e.g. Ngan'gityemerri (Palmer et al 2022) (4).

Encoding egocentric frames does not equate to usage frequency. Indeed, it is precisely the widespread distribution of egocentric frames that supports a shift of focus away from which frames are encoded in languages to speakers' frame choice from the resources available to them, following the theory of sociotopography (Lum et al 2022; Palmer 2022; Palmer et al 2017). The issue with relative frame is less that languages vary in whether they encode it, and more with why speakers may prefer or disprefer that conceptual strategy, and how variation in habitual usage relates to group-level factors ranging from environment to dominant subsistence mode; individual diversity in occupation, gender, age, literacy, bilingualism etc, often a proxy for engagement with landscape or with egocentric spatialised behaviour such as reading; and intra-speaker variation relating to task, interlocutor, speech location, etc. Recognition that most or all conceptual strategies are available to speakers of most languages brings into sharp focus the need to investigate diversity in the usage of linguistic resources by speakers.

(1) a. *the ball is **in front of** the tree*

b. *the ball is **on this side of** the tree*

(2) a. *Ngi-rr-wani-na* *nyink-an,* ***baywarra*** *kank-an* *larrkardi* *baalu.* [Warrwa]
3AUG.NOM-sit-IMP this-LOC behind that-LOC boab tree
'they were sitting there, over there **behind** the boab trees' (McGregor nd)

b *Juwa* *yardayi-wudany* *mi-nga-n* ***ngulumba****.*
2MIN north-ASSOC 2MIN.NOM-be-PRES in.front
'You are to the north, **in front** (of it [the tree]).' (McGregor nd)

b. ***Rirrban*** *yi-nga-n* *baalu,* *baanu-wudany.*
side 3MIN.NOM-be-PRES tree east-ASSOC
'The tree is **beside** it, to the east.' (McGregor nd)

(3) a. *Mudiga* *madi-**kin=ninggi*** *ngariny-fi-tyat.* [Ngan'gityemerri]
car chest-PROX=INSTR 1SG.SUBJ.PFV.poke[3SG.OBJ]-manipulate-place
'I put it down **on this side of** the car.' (Reid 1990:369)

b. *Fepi* *minbadi=nide* *madi-**wun=ninggi*** *fepi* *wagarri* *widdibemgu.*
hill big=LOC chest-FRDIST=INSTR hill two
3SG.SUBJ.PRES.stand.DU.SUBJ
'On the other side of Peppimenarti hill ["big hill"], there are two (other) hills.'
(Reid 1990:369)

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Modeling Figurative Action in Embodied Speech Acts

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Keywords: Conceptual metaphor, Conceptual metonymy, Embodiment, Illocutionary act, Transfer Model of Communication

As Cognitive Linguists, our approach to analyzing grammar, and language in general, is based on conceptual and functional principles, taking language to be best studied and described with reference to its cognitive, experiential, and social contexts, as well as the pragmatic background of language-in-use (speech act theory). Moreover, we maintain that folk models, i.e. cultural models/cognitive schemas intersubjectively shared by a social group, impact grammatical structures and usages and, in themselves, constitute a basis for associative and analogical reasoning; i.e., they give rise to conceptual metonymies and metaphors.

Using data from COCA (and other online sources) we present in this talk a detailed qualitative analysis of verbal expressions in English that figuratively involve bodily activity – movement – but, interestingly, can be used to code speech acts; more narrowly, illocutionary acts in the sense of Austin (1962) and Searle (1969). For example, *commissive speech acts* can be performed by means of sentence patterns such as (1a,b), and *declarations* via structures like those given in (2a,b):

(1) a. I **give** you my promise that p
b. You **have** my word that p

(2) a. I hereby **open** the conference on cognitive linguistics.
b. I **withdraw** my petition.

In examples (1a,b), the illocutionary act of *promising* is performed via utterances denoting *acts of transfer*, as in (1a), resulting in "bodily" *possession*, as in (1b). The OBJECT that is moved can be a message, an idea, or an illocutionary act whose propositional content *p* can be coded as e.g. a finite or non-finite complement clause, or as a nominalized construction. Such "embodied performatives" rely on (i) a folk model of verbal interaction we term the Transfer Model of Communication (TMC) and (ii) the reasoning tools of conceptual metaphor and metonymy.

Furthermore, we show that a variety of illocutionary acts known as *declarations* in speech act theory (Searle 1976), exemplified in (2a,b), may be enacted figuratively by means of verbs of bodily movement. These and similar verbs, such as *step down* 'resign', *motion* 'propose', *put forward* 'submit', again testify to the important functions of not only embodiment and enaction in natural language to convey communicative concepts, but also to the centrality of knowledge structures – e.g. action and speech act scenarios, folk models, cognitive schemas, etc. derived from and embedded in social and cultural contexts – that provide the input for the extended inferential mechanisms of conceptual metaphors and metonymies.

We conclude by asking: Which speech act types are realizable in English via explicit embodied performatives? That is, can the TMC be implemented to perform e.g. representative/assertive speech acts? Patterns like ?*I give you my assertion* and ?*You have my assertion* seem unacceptable in ordinary English. Likewise, we ask whether there exist restrictions on the use of verbs of bodily movement to perform declarations. Our study of embodied speech acts in English paves the way for comparisons with other languages w.r.t. their language-specific cultural models of enaction and embodiment, and the extent to which conceptual metaphors and metonymies facilitate reasoning to target meanings.

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Core expansion in diachronic prototype semantics: a computational case study on loanwords

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Keywords: vector space model, semantic change, Dutch, prototype semantics

In recent years, the computational modeling of semantic change has witnessed an enormous growth, testified by the introduction of new techniques (Kutuzov et al. 2018). Deep neural networks called 'transformers' have become the state of the art in the computational modelling of semantics in contemporary texts and are now also applied to historical corpora (Manjavacas & Fonteyn 2022). The gist of these models is that they represent the meaning of a single corpus occurrence (i.e. a token) as a single numerical vector and vectors of many tokens are then compared through similarity indices in order to assess whether they share the same meaning or not. Hence the term token-based vector representations.

There is also a growing awareness that the application of token-based vector representations on historical data needs grounding in historical semantic scholarship, and that consequently a tighter connection between computational modeling and linguistic theorizing should be pursued (Tahmasebi et al. 2021). Among the cognitive-functional realm of theories, diachronic prototype theory (Geeraerts, 1997) is the most appropriate framework to focus on and to put to test. At the same time it is most amenable to be tested by means of token-based vector representations based on corpora, as its key tenets are all very well suited to be subjected to computational operationalization (e.g.: the importance of quantitative aspects of semantic structure; the blurring of the distinction between semantic and encyclopedic knowledge etc.)

In this presentation I offer a case study on a fundamental hypothesis in the diachronic-prototype semantic literature, namely that changes in the referential range of one specific word meaning may take the form of a peripheral expansion on the prototypical core cases within that referential range (Geeraerts 1997: 23). This hypothesis relies on the distinction between the prototypical core and the periphery of a conceptual category. Crucially, this core/periphery distinction can be formulated in terms of token-based vector representations: core applications are those that will have the most tokens in a certain time frame and those tokens will contain the highest number of similar context words; peripheral applications will have less tokens which contain less similar context words relative to the core.

Loanwords are a suitable test case for this expectation, as they usually enter the language with a simple, monosemous reading, so that allows us to keep track in detail of the development of a word. As test cases I take a selection of 9 English loanwords that entered into the Dutch language during the 20th century, and as a corpus I rely on the newspaper section of the historical Delpher corpus (archived by the National Library of the Netherlands). Concretely, I focus on the frequency changes and vector-similarity changes of the context words of the tokens of those loanwords. I expect to see that the shift to major new meanings (either core senses or secondary, figurative senses) will usually take place after an initial expansion of the original core meaning. If core cases are indeed more stable, I expect to see earlier movement in the center than in the periphery.

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Fictive indirect speech: Demonstration of conversation as a scalar phenomenon

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Keywords: Fictive Interaction, (In)direct speech, Demonstration, Depiction

Cognitive Linguistics has shown time and again that categories are not clear-cut and fixed. One factor of conceptual extension is that of *fictivity* (Talmy, [1996] 2000), conceptualizations in-between fact and fiction. In this talk we explore the conceptual basis of the direct-indirect speech distinction through an understudied phenomenon: fictive indirect speech.

The traditional opposition between direct and indirect speech is illustrated in (1)-(2):

(1) John said: "Huh? Butter!"

(2) John said that he couldn't believe it wasn't butter

Following the influential proposal by Clark & Gerrig (1990), the quotation in (1) is 'demonstrated', whereas the embedded clause in (2) is a description. But presenting direct and indirect speech as a binary opposition has long been regarded as a simplification (see Coulmas, 1986 for an overview). Indeed, description and demonstration (or 'depiction', Clark, 2016) can be mixed, as in (3), where the depictive interjection appears in an otherwise descriptive indirect speech construction.

(3) John said that he –huh!– couldn't believe it wasn't butter

Yet, if indirect speech can include depictive elements, the traditionally assumed tight relation between direct ('demonstrated') and indirect ('described') speech is no longer stable, semantically and grammatically. Scholars have suggested that depictive elements in descriptive sentences are extra-syntactic intrusions (Kaltenböck et al., 2011), pragmatically added units (Maier, 2007), or even a prototypical third type of reported speech (Evans, 2013).

A more radical interpretation is that a stable grammatical distinction never existed, depiction and description being modes of communication only loosely correlating with specific structures (Clark, 2016; D'Arcy, 2015). Building on these ideas, we propose an alternative, based on an analysis of certain 'mixed' instances as sentential fictive interaction. Fictive interaction (FI) is the adoption of the conceptual frame of communication as a model for various functions not involving actual interaction, manifested, i.a., in non-speech meanings of communication constructions (Pascual, 2014). FI being construction-agnostic, it may occur at any level of grammar ('This painting speaks to me'). Since direct speech is the most unambiguous strategy for demonstrating speech, it is the most likely candidate for expressing FI, presenting a conceptualization as if it were spoken. Thus, (4) is a more straightforward and more common FI strategy than (5).

(4) Her eyes said: "Leave!"

(5) Her eyes told me that I had to leave

But a speaker may, under the influence of several factors, also choose a less than maximally 'demonstrating' structure: indirect speech or 'mixed' speech may also be used for FI, with a weaker sense of demonstration and a stronger sense of description. Indirect speech is not characterized by the absence of demonstration, it signals a relatively *weak* demonstration and thus a larger *degree* of responsibility for the actual speaker. We suggest that the distinctions between demonstrating/depicting and description and between direct and indirect speech, are not binary but scalar. This proposal both maintains the conceptual basis of direct and indirect speech, while correctly predicting that they may contain intermediate types and do not express fully opposite meanings.

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Phrasal frequency and literacy as predictors of on-line processing and comprehension of English subject-verb agreement

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Keywords: usage-based, subject-verb agreement, eye-tracking, literacy, frequency

This paper presents experimental evidence suggesting that word frequency and reading experience-related predictors modulate online processing and comprehension of subject-verb agreement constructions by adult native speakers of English. The experiment measures participants' eye fixation and regression saccades behaviour, reaction times, and response accuracy in a forced-choice task using an audio-visual eye-tracking paradigm. Participants completed a battery of tasks, including Literacy Rating Scale (Tarone et al. 2013), Reading Time Estimates (Acheson et al., 2008) and the UK Title Recognition Test (Marschark et al. 2011), alongside an Agreement Judgement Task (designed by co-authors, adapted from e.g., Veenstra et al. 2014).

The AJT involved matching an aurally presented subject phrase with one of two images – simple shapes (e.g., stars, circles) of easily distinguishable colours – presented on screen, see Figure 1, below. Each subject phrase consisted of a determiner and a head noun (singular or plural), followed by a preposition (e.g., 'with' or 'next to'), followed by a determiner and a local noun (singular or plural). Participants heard 42 test sentences, counterbalanced across two types. Type 1 in which the 'intervening' local noun and the verb match in number (e.g., 'The stars with the circles are blue'), and Type 2 in which the 'intervening' local noun and the verb do not match in number (e.g., 'The star with the circles is blue'). These types of SVA construction are considerably more frequent in writing than in speech (Miller et al. 1998), with Type 2 producing more attraction errors in previous elicitation tasks (Bock et al. 2001; Dabrowska & Becker 2020).

Data is being analysed using R package (R Core Team 2022) with the help of linear mixed effects models and generalised additive models. Preliminary analysis indicates that participants with lower literacy take longer processing sentential cues and make more attraction errors. These preliminary findings therefore support usage-based research showing frequency and experience effects in the online comprehension of canonical and non-canonical constructions (Farmer et al. 2012, MacDonald & Christiansen 2002, Street & Dabrowska 2014; Street 2017), as well as more recent research on native speakers' detection and production of agreement attraction errors (Dabrowska & Becker 2020).

The data also add to previous usage-based studies demonstrating how linguistic and attentional processes interact (Tomlin & Myachykov 2015), as well as complementing early corpus-based studies by providing evidence from on-line processing that native speakers are sensitive to the observed distributions (Miller et al. 1998).

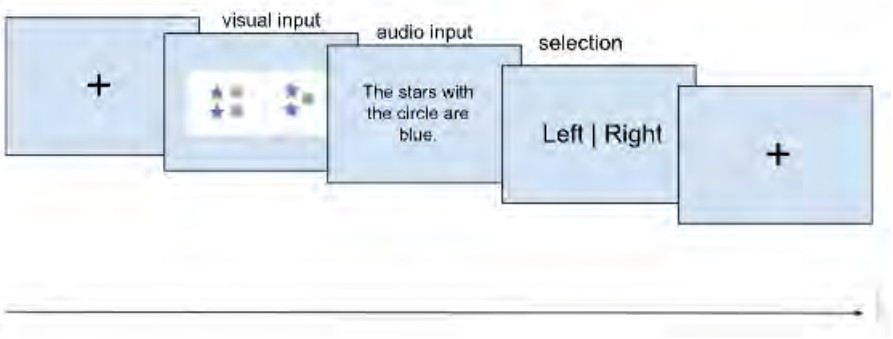

Figure 1. *A single trial in the current Agreement Judgement Task*

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The Taste of Anger: A Conceptual Metaphor Analysis of Anger in Bangla.

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Keywords: Anger metaphors, Sensory Perception, Bangla, Cognitive Metaphor, Anger Stages

The language of emotion is one of the areas where the influence of culture on cognition has been studied, especially for the expressions of love and anger. In this paper, we analyze the metaphors of anger in Bangla using the Cognitive Metaphor theory of Lakoff and Johnson (1980) and the Extended Conceptual Metaphor theory of Kövecses (2020) taking data from the colloquial and idiomatic expressions of anger in day-to-day language.

In this work, we identified some popular anger metaphors such as ANGER IS FIRE[1]/ SMOKE[2], ANGER IS POISON[3], ANGER IS HEAT[4], ANGER IS SOLID[5] and ANGER IS BLOOD[6], with the BODY AS THE CONTAINER. Anger, as a liquid, passes through different stations and takes on different manifestations. We have classified all the expressions into different stages of the emotion anger. For instance, the first stage displays the cause of anger[7]. The second stage manifests the existence of anger and the physiological effects of anger[8] on the angry person. The third stage is the attempt to control anger[9], failing which the fourth stage is the loss of control[10]. The final stage is either overcoming the anger[11] or the anger sequence is expressed through various acts of retribution performed by the angry person[12], which releases the anger and restores the body balance. In this study, we have also tried to classify different acts of anger and the physiological effects of anger according to their sense perceptions: different visual, tactile, and auditory signs such as t͡ʃokʰ pakano (to scowl), ga d͡ʒɔla (to burn with anger) and ʈɔrd͡ʒon-gɔrd͡ʒon kɔra (to roar like thunder) respectively.

Unlike English, in Bangla, we see the predominant use of reduplicating animal sounds such as fõʃ fõʃ kɔra (like a snake), gʰeu gʰeu kɔra (like a dog), kʰæ̃k kʰæ̃k kɔra (like a fox), etc. for expressing anger. Another point of departure from English is perceiving anger through gustation[13]. The gustatory perception term, PEPPERY, is used in conceptualizing the emotion of anger in various colloquial idiomatic expressions in Bangla. Furthermore, the use of the name of a kind of red hot pepper (ɖʱani lɔŋka) as a metaphor for a hot-headed person as seen in various Bengali songs, and day-to-day use of language indicates the association of the feeling of anger with the richness of flavor in Bengali cuisine. Also, an association between the emotion of anger and cooking terms like foɽa (to boil), ʈele begune jɔla (to fry like eggplant in oil), cooking utensils such as hãɽi (pot) in hãɽimukʰ (grumpy face), and even the sound of seasoning like ʧʰæk kore oɽʰa are prominent in metaphorical expressions of anger in Bangla. This study is relevant to understanding how a universal concept is expressed by the cultural and physical experiences of the perceiver.

Examples:

[1] agune gʰi ɖʰala
fire-LOC butter pour-INF
"Igniting or aggravating anger."

[2] nak kan ɖije ɖʱoa berhɔa
nose ear from smoke come out-INF
"Bursting in anger."

[3] gae biːʃ ɖʰala
body-LOC poison pour-INF
"To cause anger/To make someone angry."

[4] maʈʰa gɔrom kɔra
head hot make-INF
"Getting angry."

[5] raːg gole d͡ʒɔl
anger melt-PFV water
"Anger melting away."

[6] æk lafe amar paer rɔkt̪o maṯ̪ʰae uʈʰe gælo
one jump-CP 1SG.GEN leg-LOC blood head-LOC rise-CP go-PST.3
“At once my anger rose out of control.”

[7] ɔnnae kɔṯ̪ʰa ʃune ga d͡ʒole uʈʰlo
unfair words hear-CP body burn-CP rise-PST.3
“Unfair words flared up my anger.”

[8] baba rege laːl hoe gælo
father anger-CP red become-CP go-PST.3
“Father got red in anger.”

[9] bʰeṯ̪ore bʰeṯ̪ore gɔd͡ʒrano
inside-LOC inside-LOC seethe.INF
“Seething with anger.”

[10] ṯ̪ar raːg fũʃe uʈʰlo
his anger blow-CP rise-PST.3
“His anger flared up.”

[11] ɔnɔle d͡ʒɔl ɖʰala
fire-LOC water pour-INF
“Extinguishing anger.”

[12] ʃe ṯ̪ed͡ʒ ɖ̪ekʰije t͡ʃole gælo
He anger show-PRF walk-CP go-PST..3
“Beaming with anger, he walked away.”

[13] galagali kore gaer d͡ʒal meʈano
verbal abuse do-PRF body.GEN peppery-taste quench-INF
“Expressing the pent up anger.”

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Serial verb constructions package information, not events

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Keywords: serial verb constructions, information packaging, communicative efficiency, eventhood

In this talk, I argue that discourse is more important for understanding serial verb constructions than single eventhood. The status of the relationship between eventhood and serial verb constructions is a long-standing debate in functional-cognitive linguistics. Serial verb constructions (SVCs) have been said to encode single events (Bisang 2009), multiple sub-events (Aikhenvald 2006, 2018), a macro-event (van Staden and Reesink 2008), or even multiple events (Pawley 1987). Based on an in-depth corpus study of three languages of Northeast India, I find that SVCs most commonly express events which have been previously introduced into discourse. This suggests the lack of clarity surrounding the relation between eventhood and verb serialisation results from an epiphenomenon of information packaging constraints and principles of communicative efficiency, rather than being a core property of the construction itself.

To determine the relation between information flow and serial verb constructions, I investigated a range of multi-verbal constructions including SVCs in naturalistic data from Kera'a (idum1241), Galo (galo1242) and Duhumbi (chug1252), three Trans-Himalayan languages of Arunachal Pradesh, India. Each construction received GRAID annotations for grammatical status (Haig and Schnell 2014) and annotations for activation status of lexical items and events (Reinöhl et al. in prep), as well as identifiers tracking single events throughout a text.

The combination of annotations on different levels allows a nuanced approach to determining which factors are important for interlocutors in choosing a certain construction. SVCs were only realised within single intonation units, suggesting that they follow the "one new idea" constraint proposed by Chafe (1994). This implies that the limit of what a SVC can express is one discourse-new event, or alternatively, as many not-new events as an interlocutor wishes to construe as a single unit, or 'episode'. This hypothesis is supported by a further qualitative investigation into the distribution of SVCs and converb constructions vis-à-vis events in the corpora, which found that new events were more commonly introduced into discourse with converbal strategies, while not-new events were more commonly resumed with a SVC. The tendency of interlocutors to opt for SVCs with not-new information suggests that informativity plays a large role in determining construction choice (cf. Levshina 2022), with higher levels of contextual predictability resulting in a lower need for explicit marking of relations between events. This study into the distribution of SVCs in naturalistic corpora points to a need for a discourse-based understanding of eventhood and construction choice, as well as to the crucial role that communicative principles play in structuring language.

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Rethinking body partonymy:
From random typologies to relational systems across 48 world languages

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Keywords: Embodiment, Cognitive Semiotics, Diagrammatic Iconicity, Conceptual Blending, Cognitive Foundations of Grammar

Attempts to identify cross-linguistic patterns in comparative body part studies have so far generated more noise than signal, even within the same language family (Huisman et al. 2021), giving further credence to those who have called the whole enterprise into question, arguing that widespread variation in this domain casts doubt on the possibility that human beings have any substantially shared conceptual system of part-whole relationships (Enfield et al. 2006). But little has been done in the past 45 years to address Roy Ellen's striking critique of the field: viz., "there has been a tendency to stress the function of individual parts rather than the relationships between them, either anatomically or functionally" (1977: 364). Building on earlier work (Pelkey 2017, 2018; Pelkey et al. 2022), this paper proposes a fundamental shift from direct, isolated comparisons of partonyms between languages to comparisons between body partonym systems (BPS), featuring analogous relationships above and below the waistline. Three basic dimensions of transverse contrast can be defined in this regard as diagnostic evidence:

(1) **Transverse parallel conceptions:** analogous matches in spite of mismatched terms: e.g., if 'feet' are lexicalized separately from 'legs' below the waist, then 'hands' are lexicalized separately from 'arms' above (as in English). If 'feet' are colexified with 'legs' below, 'hands' are colexified with 'arms' above (as in Phowa, Kewa, etc.).
(2) **Transverse colexifications:** analogous matches using identical terms above and below the waistline (e.g., English *nails* and *limbs*; Kewa *wáraa* 'sole/palm', *kilikili* 'toe/finger'; Phowa *ʦɔ̀* 'wrist/ankle', *sə̂* 'toenail/fingernail').
(3) **Transverse paradigm sets:** Two or more instances of (2) mapping onto one or more instances of (1) to form a diagrammatic paradigm set (with patterned, internal iconicity between part-whole relationships) above and below the waistline.

These three levels are not equally diagnostic. Dimension (1) would constitute weak evidence for BPS; dimension (2) would constitute moderate evidence; and dimension (3) strong evidence. Dimension (3) is also the most complex, necessarily containing instances of (1) and (2), while (2) is simultaneously an instance of (1), suggesting an integrated implicational hierarchy of evidence for part-whole membership organization.

Working from the hypothesis that most world languages, regardless of family, feature BPS across all three dimensions of contrast, the paper reports on a pilot study testing these dimensions of contrast across 48 world languages from 33 language families, quota sampled for geographic distribution, genetic diversity, and speaker population. Findings show evidence for BPS at the level of dimension (1) in all languages sampled (the weakest layer of supporting evidence). A full 92% (n=44) of these languages also show evidence of BPS beyond dimension (1). Of this number, 25% (n=11; 23% of total) show evidence of BPS in dimensions (1) and (2) alone, operationalized as moderate supporting evidence; and 75% (n=33; 69% of total) show evidence of BPS in all three dimensions, resulting in transverse paradigm sets (the strongest level of supporting evidence). The implications of these findings not only rehabilitate body partonym studies' relationship to cross-linguistic conceptual modeling, they are also relevant for theorizing the cognitive foundations of grammar and the origins of complex conceptual blending.

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"the *living dead*" or "*fight* till the end"? – Metaphors of dementia in online health forums

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Keywords: metaphor, e-health discourses, dementia, discourse analysis

Virtual health discourses are becoming increasingly important in the modern world. Persons living with dementia (PWDs) and their family care persons (FCPs), among other discourse groups, use e-health offers to gain information about illnesses and therapies, but also seek interpersonal connection in virtual health communities such as forums (e.g. Kleinke 2020). It is still relatively unexplored territory how exactly PWDs and FCPs use these virtual discourse spaces to conceptualize themselves as 'ill' or as 'carers', and which perspectives they take on the disease itself.

This talk will offer a concise, qualitative comparison of the specific perspectivation patterns of PWDs and FCPs, with a special focus on conceptual metaphors (see Lakoff & Johnson 1980; Kövecses 2010). Metaphors have been shown to have central importance in (health) discourses due to their perspectival and discourse-structuring functions (Charteris-Black 2004; Hart 2010). For instance, mass media discourses metaphorically construe dementia as a FLOOD, VIRUS, or ZOMBIE, thereby inducing fear and dehumanising PWDs (Behuniak 2011; Peel 2014; Hillman & Latimer 2017; Zeilig 2013). In medical discourses, metaphors are used to construe patient and caregiver roles, e.g. the patient as a WARRIOR (Sontag 1991), or the caregiver as a THEATRE DIRECTOR (Wilson et al. 2021).

The data for this talk stem from 300 posts each from specific threads in the FCP subforum "I have a partner with dementia" as well as the PWD subforum "I have dementia" on Dementia Talking Point (hosted by the Alzheimer's Society UK). Established illness metaphors were identified with Wordsmith concordance searches, and then analysed with a modified Metaphor Identification Procedure (MIP; see Semino et al. 2018); a close reading of each post was further conducted to identify novel, creative metaphors.

Results show that in online forums, discourses of fear and dehumanisation tend to be largely absent: FCPs do not conceptualise 'their' PWD as zombie-like, nor are such negative self-descriptors used by PWDs. While PWDs generally use less metaphorical conceptualisations, as well as less source domains overall, certain similarities between metaphor usage in PWDs and FCPs are apparent. For instance, both discourse groups make use of 'classical' illness metaphors of ILLNESS AS WAR and ILLNESS AS JOURNEY, and personify dementia as an intentional, malicious actor:

1) its *a evil disease* cruel and nasty (FCP_DJ#574)
2) they [the PWDs] may bite, scratch, nip punch, spit at you, kick out, or worse, please remember *it's not them*, but *the disease*. (PWD_AYWTK#1)

Results also show that discourses of LOSS, DECLINE and DESCENT of the patient into dementia only occur in FCP posts. The metaphorical conceptualisations highlight the struggles and difficulties of being in a caregiving role. 'Their' PWD is conceptualised as absent as a partner, with memory loss being the key symptom of dementia that is discussed metaphorically. It is also only in the FCP data that we find rejections of metaphors (marked by quotation marks in (3)) that are felt to be unfit to conceptualise the FCP's experiences:

3) I am almost 7 weeks into this phase of *the "dementia journey"* (FCP_DJ#473)

In sum, the talk highlights the unique, lived perspective of PWDs and FCPs, and gives insights into how metaphors are used in online health forum interactions to "reveal [the writers'] own specific and sometimes conflicting perceptions, views, attitudes and challenges" (Semino et al. 2018: 2) on dementia.

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Tool Use, Analogy and the Evolution of the Cognitive Foundations of Metaphor: An Archaeological and Comparative Perspective

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Keywords: Language Evolution, Analogy, Tool Use, Metaphor, Archaeology, Comparative Cognition

Metaphor has been shown to be a central process in human language and cognition (Lakoff & Johnson 1980). What is more, metaphor has also been assigned an important functional role in the evolution of language both in diachronic change (Hopper & Traugott 2003), and the emergence of linguistic properties such as grammatical structure (Smith & Höfler 2015) and compositionality (Ellison & Reinöhl 2022). Uncovering the evolution of metaphor and the cognitive processes supporting it therefore presents an important part of explaining the evolution of human language and cognition.

In this talk we focus on one central process supporting metaphor, that of analogy. Analogy has been argued to be a central process underlying metaphor, as it represents the process of comparing a source and target domain in terms of potential correspondence relations among its constituent elements (Itkonen 2005). Here we present two sources of evidence to investigate the evolution of analogy and the cognitive foundations of metaphor: archaeological and comparative data.

From the perspective of archaeology, we can try to look for analogical abilities in archaeological artifacts. Although it falls within the realm of cognitive archaeology there are few examples of discussion of analogical capacities (de Beaune 2004, Osiurak & Reynaud 2020). Here, we propose a different way to look for analogical capacities in archaeological artifacts by considering the productional diversity (i.e. different ways to achieve the same goal) of an archaeological collection. Differences in chaînes opératoires leading to the same productional goal may indicate the presence of analogical capacities. We develop this methodology using the example of the Collection de la Pointe aux Oies, Wimeureux, France (Tuffreau 1971). In this collection, we find two types of core preparation for further knapping either by opening a striking platform with a preliminary flake or by searching for a core with a natural striking platform. Since the productional goal and the technical criteria of both types of striking platforms were identical, we can suppose analogical capacities for the population who produced these tools.

From the perspective of comparative cognition, analogical abilities have also been found in tool use. In birds, for example, New Caledonian crows use two types of tools—hooked-twigs and stepped-cut tools—to achieve the same goal—looking for food in living and dead wood (Hunt, 1996). The manufacture of the hooked tools includes multiple steps with variations of material and ways of manufacturing (Hunt & Gray, 2003). In nonhuman primates, wild chimpanzees use leaves and moss functioning as sponge to absorb water (Hobaiter et al., 2014), and hands and folding leaves as “containers” to drink water (Sousa, Biro & Matsuzawa, 2009). They also crack nuts with a hammer-like tool on an anvil. The selection of the toolkit depends on multidimensional features, such as weight, material, distance to nut and the anvil (Sirianni, Mundry & Boesch, 2015). These data suggest that nonhuman animals can use different methods to achieve the same productional goal in an analogical fashion.

In sum then, we demonstrate that archaeological and comparative data on tool use and analogy can shed light on the evolution of metaphor.

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“Ich hab letztens im Internet total den süßen Hund gefunden” – Grammaticalization paths of NP-external degree modifiers in German

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Keywords: German, degree modifier, intensifier, grammaticalization

Colloquial German features a special kind of degree modifier that can occur outside of typical syntactic contexts for degree modifiers. A typical degree modifier such as *sehr* (‘very’) usually stands inside an predicative AdjP (1) or inside an NP (2) (cf. e.g. Duden 2022: 837–842).

(1) Der Hund ist sehr süß.
The dog is very cute
‘The dog is very cute’

(2) Ich habe einen sehr süßen Hund gefunden.
I have a very cute dog found
‘I have found a very cute dog’

The degree modifiers discussed here, *total* (lit. ‘totally’) and *voll* (lit. ‘full, completely’), occur in what has been named “external degree modification constructions” (Gutzmann & Turgay 2015, Gutzmann 2019) as in (3).

(3) Ich hab letztens im Internet total den süßen Hund gefunden.
I have recently in.the internet DM the cute dog found
‘I have recently found DM the cute dog on the internet’
(deCow14 ID b9a5d2c5787b24dd0e587cdf401185894eca)

Previous studies such as Gutzmann & Turgay (2015) argue that expressive intensifiers such as *voll* and *total* intensify the adjective even if they occur outside of an NP. Based on corpus data from the deCow16B (Schäfer & Bildhauer 2013, 2018), we suggest a cognitive, usage-based perspective on a possible grammaticalization path these intensifiers take and conclude that they are developing into intensifiers with a scope over whole NPs and not just adjectives. For this we analyzed 1,860 occurrences of *total* and 2,836 occurrences of *voll* in regard to features of the modified NP (head, adjective, definiteness), their scope, and the main verb of the sentence they occur in.

We propose that this widened scope over whole NPs develops through occurring with phrasemes as critical contexts (cf. Diewald 2002), such as in (4), where the scope of the intensifier ranges over the phraseme as a whole.

(4) In der Nacht geht da voll die Post ab!
in the night goes there DM the post off
‘A lot is happening there at night.’
(deCow14 ID d726665b2c9d4e66fdd54855ab1a14d7b42a)

From this total and voll start occurring outside of definite NPs without adjectives that are not part of phrasemes, which can be seen as isolating contexts for their new grammaticalizing function, as shown in (5).

(5) Das ist ja voll der Quatsch, den ich hier höre!
That is PART DM the nonsense that I here hear
‘That is PART DM the nonsense that I hear here!’
(deCow14 ID 11334deeb68a02e528eeebea3492abc26f97)

The synchronic result of the grammaticalization leads to a semantically underspecified target of the intensifier. This semantic underspecification goes along with a wider scope over NPs which no longer need an adjective.

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Ukrainian President Zelenskyy's war discourse: An idea-turned-effect analysis

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Keywords: Image schema, Resistance, Victory

Ukrainian President Zelenskyy's international war discourse consists of the speeches delivered to other countries' parliaments throughout 2022. Its initial – resistance – part seeks international support while the beginning of the second – victorious – part is marked by the address to the American Congress (22 Dec 2022).

The research question concerns determining how the discourse forms impressions of resistance and victory indicated by naming units at the beginning of speeches. The material of the study is the English versions of the addresses to the UK, Polish and German parliaments beginning with the constructions *13 days of war*, *16 days of war, three weeks of invasion / war* respectively as well as two speeches to the US Congress. The first begins with reference to resistance (*But it does not give up. And it didn't even think to give up!*) (Zelenskyy 2022a) while the second names victory (Zelenskyy 2022b).

The idea-turned-effect analysis is based on image schemas capturing the interaction of human body with an environment (Johnson 1987: xvi). The definition of resistance as exerting force in opposition (MWD 2022) reveals its connection with the COUNTERFORCE image schema representing head-on meetings of forces (Johnson 1987: 46) denoted by the noun *war* while resistance is associated with BLOCKAGE impersonating a barrier (Johnson 1987: 45). Meanwhile the definition of victory as the overcoming of an enemy (MWD 2022) suggests a link to the ENABLEMENT schema representing a sense of power (Johnson 1987: 46) and to COMPULSION rendering an experience of being moved by external forces (Johnson 1987: 46).

According to the idea-turned-effect analysis the speeches produce resistance effect by two variants of interaction between COUNTERFORCE and BLOCKAGE in the textual structure and the choice of units. The first variant begins with war-COUNTERFORCE followed by reference to resistance-BLOCKAGE with emphases on their sources. The second variant starts with resistance-BLOCKAGE followed by war-COUNTERFORCE.

The victory effect is formed in the address to the American Congress (Zelenskyy 2022b) throughout three sections: victory in the battle for the minds of the world; resistance continuing; vision of an absolute victory. The idea of victory transforms into the corresponding impression evoking ENABLEMENT by the constructions *Ukraine is alive and kicking, gives us courage* etc. Like previous speeches the resistance effect rests on the interaction of COUNTERFORCE denoted by the noun *battle* with BLOCKAGE indicated by negation, e.g. *This battle is not only for the territory*; *cannot be frozen,* etc, by the verb *stand*, e.g. *the Ukrainian Donbas stands, our Defense Forces stand*, etc. The absolute victory section returns to ENABLEMENT denoted by the verb *can*, e.g. *you can speed up, can assist* etc., as well as by reference to COMPULSION by the verb *must* and the construction *let's*, e.g. *Let's do it!*

To conclude, the effects produced by Ukrainian President Zelenskyy's international war discourse rest on the interaction between COUNTERFORCE and BLOCKAGE image schemas in resistance texts / sections and on the ENABLEMENT schema combined in the victory section with the speech act of request based on the COMPULSION schema.

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Making scents: Regularity in the semantic source domains of smell words.

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Keywords: Smell, Sensory linguistics, Semantic change, metaphor, metonymy

> "*It has been argued by some that the lack of classification* [of smells] *is due to the lack of distinctive linguistic terms. Quite the opposite is true. Such terms would have arisen had there been any obvious basis of grouping. The lack of them reflects the inherent difficulty of classification, which even modern science has not overcome.*" (Buck 1949: 1025)

Our sense of smell, along with its siblings touch and taste, has been drastically under-represented in research compared to the over-representation of vision then sound (Hutmacher 2019: 2–3). The Western suppression of smell has meant that our sense of smell is regarded as the most dispensable (Kant 2006: 50–51) and that smell is the sense that people are the least scared of losing (Hutmacher 2019: 2–4). For linguistics, the sense of smell has been described as "the mute sense" (Ackerman 1991: 20) or ineffable, and much has been made of its assumed inability to be encoded in language (see also, e.g., Engen 1987: 497; Sperber 1974: 115–116).

More recently, however, there has been a rise of studies on the role of smell in language showing the remarkable diversity in the linguistic resources and their use across the world (Majid 2021; Majid et al. 2018), contra Buck. So, against this recent backdrop of linguistic diversity, we can review the lexicon of English in a new light. And, as Majid (2021: 120) asks: "Are smell words more likely to lexicalize some odors than others?" On the premise that there are different groupings of smells made by people around the world, we ask how have smells been grouped by English speakers throughout history and — given the domain as a whole is relatively lacking — what is the basis to these groupings? To this end, this talk takes a diachronic approach the smell lexicon of English. We collected over 25 English smell terms and traced their etymologies and the semantic trajectories. Collating the range of source domains, we find a degree of intra-linguistic regularity. Several common domains emerged from which English smell terms are drawn: AIR, BURNING, TASTE, TOUCH, and EMISSION.

These trajectories support Traugott and Dasher's (2002) assertion that meanings shift from the concrete to the more abstract and subjective. Importantly, they point to regularities in the sources of smell terms throughout the history of English and reveal the conceptual metaphors in the domain of smell that contribute to the basic smell lexicon. We also explore both linguistically internal (phonaesthesia) and external (synchronous cultural models) processes that motivated these shifts. Finally, we discuss the implications of the English findings in terms of potential cross-linguistic regularity; that is, the extent to which these domains are culturally specific to English (at a certain time) or occur more broadly. These potentially cross-linguistic regularities allow us to contribute part of an answer to Majid's question and to better understand the shared communicative purpose of olfaction.

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The effect of aptitude and input on the grammatical proficiency of adult Greek-English bilinguals

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Keywords: language aptitude, grammatical proficiency, bilingualism, ultimate attainment, second language acquisition (SLA)

Ultimate attainment is a major area of interest within the field of second language acquisition. Although some second/foreign (L2) language speakers achieve nativelike proficiency in the L2, most individuals fall short of native mastery. Traditionally, researchers have investigated differences in L2 ultimate attainment in relation to age effects, often arguing that speakers learning a second/foreign language past a biologically determined period are unable to reach native(like) attainment (DeKeyser, 2000; Granena & Long, 2013; Johnson & Newport, 1989; Lenneberg, 1967). However, this explanation fails to account for speakers who succeed in spite of their late acquisition as well as those who are unable to reach nativelike proficiency despite their early onset. In addition to age, previous studies have shown that the varying degrees of L2 attainment can be partially explained by language aptitude (Abrahamsson & Hyltenstam, 2008; Li, 2015; Sparks et al., 2011) and the input received (Flege & Liu, 2001; Moyer, 2011). Crucially, recent research suggests that aptitude seems to also play a role in L1 acquisition (Dąbrowska, 2018) and effects of input have also been reported for native language development (Unsworth, 2013).

The aim of this study was to further explore the contributions of input and aptitude to language acquisition, and in particular, grammatical attainment, by assessing the potential effects of these two predictors on grammatical proficiency in the L1 and L2 of the same group of speakers. We recruited 75 participants, all native speakers of Greek who had learned English as a foreign language in Greece and immigrated to the United Kingdom in adulthood (mean age of arrival = 27.3, SD = 6.4). Grammatical proficiency was measured through a grammaticality judgment task administered in both the L1 and the L2. Aptitude was measured through Sentence Pairs, a task assessing grammatical sensitivity based on the Words In Sentences test from the MLAT battery. Finally, the amount of input was measured using a new cumulative measure that captured L1 and L2 exposure throughout the participants' lifespan.

Results revealed a strong relationship between exposure and grammatical proficiency in the L2, as expected, and, most interestingly, a relationship between aptitude and grammatical proficiency in both the participants' L1 and L2 that was stronger for the former. The effect of input fits in well with usage-based accounts of language acquisition (Bybee & Beckner, 2009; Tomasello, 2009). The findings regarding aptitude suggest that explicit aptitude is relevant for L1 acquisition and not only L2 learning, as previously believed, thus challenging the claim that L1 and L2 acquisition are fundamentally different.

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Variability of multiple translations as evidence for cognitive and linguistic factors underlying translator decisions

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Keywords: Translation variability, Translator choices, Salience, Noun sequences

While research in Translation Studies naturally relies on constructs and methods from various subfields of linguistics, there have been repeated calls for developing a unified theoretical framework and especially for improved interaction with cognitive linguistics and psycholinguistics (De Sutter & Lefer, 2020; Halverson & Kotze, 2021). In this context, Halverson's (2017) revised "gravitational pull" (RGP) model aims to explain translators' behavior in terms of usage-based factors such as the salience of source and target items and the entrenchment of translation pairs. However, the term "salience" remains notoriously ill-defined in linguistics, tending to conflate distinct phenomena such as attentional prominence, surprisal, and frequency (Boswijk & Coler, 2020; Schmid & Günther, 2016; see also Gilquin, 2008). Furthermore, salience may result not only from lifelong exposure but also from recent priming effects (Hartsuiker et al., 2016; De Sutter et al., 2021). In this talk, I discuss how the components of Halverson's RGP model may be operationalized.

As a test case, I present a study of French translations of English noun sequences (e.g., *disaster relief program coordinator*). Psycholinguists have long investigated how compound processing may elucidate the structure of the mental lexicon (Libben, 2005; Baayen et al., 2010; Gagné, 2011), and cross-linguistic research can extend this to bilingual cognition. Furthermore, the bare juxtaposition of nouns provides efficient information packing in English but poses specific challenges for translation into French (cf. Lefer & De Clerck, 2021). At the formal level, French tends to use prepositional post-modification, but the accumulation of prepositions can impose a significant cognitive load for longer sequences (e.g., *disaster relief program coordinator → coordinateur du programme d'aide en cas de catastrophe*). At the semantic level, potentially ambiguous relationships between constituents, left implicit in English, often need to be explicitated in French.

I use data from the Multilingual Student Translation corpus (MUST; Granger & Lefer, 2020), consisting of French student translations for English texts specialized in sustainable finance. The resulting access to multiple translators' interpretations and realizations makes it possible to explore translation *variability*, i.e., the number of different solutions for a given source instance. This approach, already championed by Malmkjær (1998), remains underexplored to date (but see Castagnoli, 2020). More specifically, I present results from two analyses: (1) a qualitative description of how translation solutions vary at three structural levels (main constituents, linking prepositions, and surface grammar), which can reveal different aspects of how translators interpret source ambiguity; and (2) quantitative multifactorial models of translation variability as a function of sequence length, lexicalization, frequency of use, and structural ambiguity.

Thus, while previous RGP studies have explored the under- or overuse of particular lexical or grammatical forms in translation, I propose that studying the variability of multiple translations provides a complementary approach to elucidate the cognitive and linguistic factors underlying translator decisions.

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Pseudo-coordination in German

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Keywords: pseudo-coordination, grammaticalization, subjectification, corpus-based analysis, light verb

German pseudo-coordination (PC) is a construction with a relatively low degree of grammaticalization in comparison to PC in other languages (Proske 2019), for example English (e.g., Stefanowitsch 2000; Hopper 2002) or the Scandinavian languages (e.g., Kinn/Blensenius/Andersson 2018; Hilpert/Koops 2008). However, previous work has identified effects of semantic bleaching and subjectification with a class of cognitively basic verbs in the first conjunct (V1), which are cross-linguistically typical for both PC and grammaticalization in general: Motion verbs ('come', 'go') can be used for highlighting the purposefulness with which the subject referent carries out the action denoted by the verb in the second conjunct (V2) (Proske 2017), see example 1.* Posture verbs ('sit', 'stand') can mark purposefulness as well, but can also be used to highlight the temporal extension of the action denoted by the second verb (Proske forthcoming), see example 2.

(1) *gehen und* V ('go and V')

also die ganz (.) die wenigsten GEhen irgendwie ma un inforMIERN sisch– über neue geSETze– oder über neue: SCHILder–
'Few people go and read up on new laws or on new traffic signs.'
(FOLK_00351_T_01, c8)

(2) *stehen und* V ('stand and V')

und myrte steht dann da und fÖ:hnt sich die HAAre als ich komme.
'And Myrte stands there and blow-drys her hair when I come.'
(FOLK_00267_T_01, c809)

Some instances of V2 may also influence the meaning of the two conjuncts taken together; for example, when *sagen* ('say, utter') is combined with motion or change-of-posture verbs ('sit down', 'stand up'), the PC construction can take on meanings like 'claim' or 'argue', see example 3.

(3) *sich hinstellen und* V ('stand up and V')

ich glaube nIcht dass äh– herr GEIßler sich jetz hInstellen wird und SAgen wird; das DARF gebaut werden oder darf NICH gebaut werden.
'I don't think Mr. Geißler will stand up and say this and that may be built or may not be built.'
(FOLK_00070_T_09, c58)

The goal of our study is to systematically describe the spectrum of meanings that (given V1s in) PC can express in German and the (grammatical and lexical) factors that contribute to particular examples taking on one meaning rather than another one. While previous studies of German PC were based on oral data only, we use the spoken German reference corpus FOLK (http://agd.ids-mannheim.de/folk.shtml) as well as the much larger web corpus DECOW (Schäfer/Bildhauer 2012) in order to obtain a sample that is large enough for quantification. The coded categories include, among others, the lexeme and verb class of V2 (using the categories of Vendler 1967) as well as a coarse classification of the meaning of V1 as either 'literal', 'aspectual' or 'subjective'. The results show specific preferences of each V1 for certain V2s (e.g., is V2 *sagen* ('say') especially associated with V1 *kommen* ('come')?) as well as associations between the meaning of certain V1s and the choice of particular types of V2 (e.g., are subjective uses of *stehen* 'stand' associated with stative V2s?). In both cases, it has to be considered whether it is the verb class as a whole or just individual V2 lexemes that are responsible for the association. With regard to posture verb PC, the results will allow for a comparison to the *am*-progressive, which can be seen as the more strongly grammaticalized alternative for expressing 'ongoingness' in German and which has been investigated in terms of verb classes and subjective meanings as well (e.g., Flick 2016; Anthonissen/De Wit/Mortelmans 2016).

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[*] Examples from the spoken corpus FOLK have been transcribed according to GAT2 (Selting et al. 2009).

Hand gestures in L1-L2 conversations: a frame-based analysis

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Keywords: Abstraction, Frames, Gesture, Foreigner Talk

Foreigner Talk refers to a repertoire of linguistic and non-verbal strategies that a language community regards as appropriate in interactions with less proficient L2 speakers (Fischer 2016). Such adaptations include a more elaborate use of hand gestures (Tellier et al. 2021). However, research on gestures in Foreigner Talk has almost exclusively focused on their ability to illustrate concrete actions and objects, limiting our understanding of how more abstract gestures can be helpful in interactions with L2 speakers. In this paper, we propose a qualitative analysis of gestures in four excerpts from a corpus of semi-spontaneous conversations between L1 and L2 speakers and we highlight gestures that motivate their meaning at different degrees of abstraction.

The excerpts are selected from our video corpus containing 138 dyadic conversations of 9 minutes each. In these recordings, 23 groups of three unacquainted participants, two L1 speakers and one L2 speaker of Dutch, had to get to know each other in pairs. The L1 participants were all university students (mean age = 22) and the L2 participants were recruited from language courses organized by the university (mean age = 27, CEFR level A2-B2). Speech was transcribed using the GAT2 conventions (Selting et al. 2009) and gestural behavior was annotated using the M3D coding system (Rohrer et al. 2021). In the excerpts used for the micro-analysis, we made a more detailed transcription of the temporal relation between speech and hand gestures using Mondada's (n.d.) guidelines.

Our analysis focusses on different levels of abstraction in hand gestures by referring to Mittelberg's (2019) frame-based approach. The core idea is that gestures indicate (i.e. through deixis) or depict (i.e. through iconicity) a part of a frame. If we understand a frame as a whole, we can make inferences about its parts. In line with Mittelberg, we distinguish between basic, complex and highly abstract or schematic frames.

In this paper, we show that L1 speakers use hand gestures to evoke all three types of frames in their interactions with L2 speakers. The findings problematize the prevailing view on abstract and/or metaphorical gestures in Foreigner Talk (Adams 1998, Tellier et al. 2021) according to which L1 speakers avoid metaphorical meanings in gesture. We demonstrate that abstraction (as the specificity with which something is being characterized, Langacker 1987: 132) allows for more flexibility and that it is a powerful means for communicative adaptation. The power of more abstract or schematic gestures is not only due to the fact that they can illustrate abstract concepts, but also to the fact that they take a structuring function: the entities being referred to in discourse receive a position in physical space. Different entities correspond with different portion of that space and, as such they become even more concrete.

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Basic colour terms revisited - cross-linguistic variability and regularity in the colour term lexicon

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Keywords: lexicon, colour terms, cognitive typology, writing systems, anthropological linguistics

Colour vocabularies show arguably the most exciting lexical gaps that anthropology and linguistics have addressed. Over the past 164 years, the rationale has changed from assumed anatomical deficits in historical populations, to linguistic-cultural arbitrariness, to a universal-evolutionary approach. The last paradigm shift, Berlin and Kay's (B&K) colour word theory is critically examined in this talk.

The theory developed between 1969 (cf. Berlin & Kay 1969) and 2009 (cf. Kay et al. 2009), partly in collaboration with other researchers, and has significantly determined typological colour word research. B&K's universal and evolutionary colour word theory has since been criticised in numerous publications (e.g., Crawford 1982, Hickerson 1971, Lucy 1997, Saunders 1992). While the theory has gone through some changes, especially considering the sequence in which colour terms develop, the methodology and as part of it the criteria for BCT, have not been revised by B&K.

What can cross-linguistic variability and regularity tell us about the composition of colour term lexicons? In my research I investigate the way of reasoning and methodological weaknesses of B&K's criteria as definition for their concept *basic colour terms* (BCT), to create improvements for future colour word research. To achieve this goal, I evaluate B&K's theory. If we look at the colour term lexicon from a cross-linguistic viewpoint in a bottom-up manner instead of top-down, it will open a different perspective on morphological considerations, translatability, language structure as well as inconsistencies in application of the BCT criteria. The languages used for this comparison are Chinese, Japanese, and Croatian among others. This will not only shine a light on the shortcomings of the current criteria, but also help to understand how the methodology stands in the way of new findings.

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Communicating about vision and touch in two unrelated languages

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Keywords: language of perception, linguistic diversity, communication task, codability

Traditionally, it has been assumed there is a universal hierarchy of the senses with vision at the top as the sense most important for human cognition. This hierarchy can be observed in language, for instance in the range of meanings and frequency of use of basic verbs of perception (San Roque et al. 2015; Viberg 1983). However, research on descriptions of sensory experiences and how efficiently these can be encoded shows great variability between languages (Majid & Burenhult 2014; Majid et al. 2018). In this presentation we follow up on this research by focusing on a comparison of vision and the sense of touch, which have not been investigated systematically in comparative study as yet. We explore the domains of texture and shape, which are particularly interesting because they can be apprehended through both vision and touch. We focus on two unrelated languages spoken in different parts of the world, Dutch (Netherlands) and Avatime (Ghana). Neither has been tested previously in this paradigm, but based on data from related languages, we predicted that Dutch speakers (like English) would show better performance on visual than haptic stimuli, whereas Avatime speakers (like other West African languages) would show better performance on haptic than visual stimuli (see, e.g., Majid et al., 2018).

In both communities, participants took part in a communication task in which one person had to describe shape or texture stimuli and the other person had to select the described stimulus out of a range of stimuli. Participants either saw the stimuli or explored them by touch, while blindfolded. As a measure of the speaker's ability to efficiently linguistically code the sensory stimuli, we measured the agreement between speakers on the descriptors used for each stimulus. As a measure of listener comprehension, we recorded whether or not the listener could select the correct stimulus accurately.

We found an effect of language on the relative codability of the senses. As predicted, Dutch speakers agreed more in how they described stimuli when participants could see the stimuli than when they explored them by touch. However, there was no difference between conditions for Avatime speakers. In addition, we found Dutch speakers showed higher agreement in naming shape than texture stimuli. Again, in Avatime, the two domains did not differ in codability. With respect to communication accuracy, we found regardless of sensory modality or stimulus type Dutch speakers more often selected the correct stimulus than Avatime speakers. This is surprising given the differences in linguistic coding by speakers, suggesting that efficient codability and communication accuracy may present different pictures of the relation between language and the senses.

All in all, these findings support the growing recognition that languages and cultures differ in which senses are most salient for communication. Although Dutch speakers show the same visual dominance reported in other Western languages, the Avatime data clearly show that vision is not universally dominant. The sense of touch can be as important as vision in the right cultural context.

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The role of co-occurrence patterns in the acquisition of sociolinguistic variation: shaping a methodological framework

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Keywords: Cognitive Sociolinguistics, Language acquisition, Sociolinguistic variation, Artificial language learning

BACKGROUND | The usage-based thesis assumes that language acquisition results from the extraction of linguistic units from input (Langacker 1987, Tomasello 2003, Bybee & Beckner 2012). Frequency is central to that process: the more often an utterance is encountered, the more entrenched it becomes in memory (Langacker 2000, Boyland 2009). From a cognitive sociolinguistic perspective, it has been argued that the frequency with which language variants and social categories co-occur in input influences the speed with which the mental link between them is acquired by language users (Foulkes 2010; Docherty, Langstrof & Foulkes 2013). However, experimental research on this topic is limited in number and methodologically diverse: the differing design choices from previous studies complicate the construction of a uniform framework to answer the fundamental question of how socially meaningful language variation is learned.

RESEARCH AIMS | The aim of the present study is twofold. First, it examines how the distributional characteristics of linguistic input relate to the acquisition of sociolinguistic variation. Second, the study proposes a coherent methodological paradigm to experimentally investigate this and related developmental questions of socially meaningful language variation by building on and optimising design choices from earlier work in a structured way.

METHOD | Our experiment employs semi-artificial language learning to train participants on a non-existing sociolinguistic variable, thereby exploring various co-occurrence patterns of language variants and social categories in a fixed amount of input. A sample of 80 Flemish students is exposed to short sentences in Dutch that contain a pseudonoun (e.g. Ik zie een stipis. “I see a stipis.”). This pseudoword can contain either one of two different variants, viz. a voiced versus voiceless medial stop, which co-occur probabilistically with two speaker gender identity groups, i.e. speakers identifying as male versus as female. Co-occurrence patterns of variants and speaker groups are manipulated between participants: one variant is used by one group in 90%, 75% or 60% of the group’s total number of utterances. After exposure, participants complete a categorisation task that measures their learning of associations between the linguistic variants and speaker gender identity, also testing for pseudowords not encountered in the training phase.

EXPECTED RESULTS | Frequency of co-occurrence strengthens the mental representation of utterances and facilitates the retrieval of linguistic and social information (Boyland 1996, Bybee & Thompson 2000, Ibbotson 2013, Drager & Kirtley 2016). We therefore expect more frequent co-occurrence of the same linguistic variant with the same social setting to result in more successful learning across participants, i.e. in the 90% condition followed by the 75% and 60% conditions respectively. Our results will contribute both to the refinement of models of the cognitive representation of sociolinguistic knowledge and to the development of a methodological paradigm to address the question of how listeners acquire the social meaning of linguistic variation.

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Conceptualization of event roles in a second language: Effects of L1, L2 word frequencies, and L2 proficiency

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Keywords: Event roles, Thinking for speaking, Japanese, English

In linguistic descriptions of events, event roles provide information about "who did what to whom." Previous research has shown that when event roles are encoded linguistically, entities that have higher conceptually accessibility are more likely to be the subjects of the sentences (Rissman et al., 2019). Two major factors that influence conceptual accessibility are animacy (the extent to which something is considered alive or not) and agency (whether something is the initiator of an action). Animacy and agency can affect the likelihood that an entity is selected as the subject of a sentence in different ways across languages. For example, compared to English, Japanese is a language that gives priority to animacy over agency when considering which entity to choose as the subject of a sentence (Ito, 2018). To be specific, humans are more likely to be the subjects when they are patients (receiver of an action) in Japanese than in English.

To the best of our knowledge, no previous studies ever investigated whether and, if so, how L1-entrenched conceptualization of event roles affect L2 learners' conceptualization of event roles. To this end, we prepared 200 images as the materials, with 50 images in each of four different types of action chains involving agents and patients: (1) animals chasing humans (2) humans chasing animals, (3) humans throwing objects, and (4) disasters threatening humans. The participants were 44 native Japanese speakers and 44 native English speakers. They were asked to describe the images in a single sentence and write it down. The native Japanese speakers were asked to complete this task in both L1 Japanese and L2 English on different days.

We were interested in whether agents were chosen as the subjects in the sentences. Using the generalized linear mixed-effects model with a logit link function, we observed a stronger tendency of choosing humans as the subjects across four categories of images in the Japanese participants than in the English participants. However, when the Japanese participants used L2 English to describe the images, this crosslinguistic difference was reduced. Interestingly, we also found a significant effect of word frequencies in L2 English. The higher the frequencies of the English agent words relative to those of the English patient words, the more likely the agents were selected as the subjects of the sentences by the Japanese learners of English. This effect was not observed in L1 Japanese or in L1 English. Moreover, this frequency effect was found to be mediated by learners' L2 proficiency. The higher the learners' L2 proficiency is, the smaller the observed frequency effect becomes.

In conclusion, L1 motivates speakers to conceptualize event roles in a certain way. However, L2 also motivates speakers to reconceptualize event roles differently, which is further modulated by L2 word frequencies and L2 proficiency.

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Motivating English Aspect

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English aspect has been studied extensively. However, very little is known of the motivation that determines aspect. The Simple and Progressive Aspect of English distinguish complete situations from incomplete ones. Their form and meaning can be understood more generally in terms of Langacker's (2016) dimensions of *baseline* and *elaboration*. The Simple Aspect describes a complete situation and represents an autonomous baseline; the Progressive Aspect describes an incomplete situation and represents a dependent elaboration. The elaboration of a situation by means of the Progressive can be seen in its augmented form and its unique meanings of ongoingness, limited duration and inferred endpoints. These properties are characteristic of heterogeneous situation types, i.e. Events.

Homogeneous situation types have no phases and hence are not compatible with the Progressive Aspect. If the Progressive is used with a stative verb, it elaborates the State into an Event. Thus, the sentence *He is being obnoxious* is understood in the event-like sense of deliberate behaviour.

Habituals conflate recurrent events with a homogeneous, state-like situation. The use of the Progressive makes us perceive an indefinitely lasting series of events as occurring simultaneously. Sentences such as *She is always asking for new clothes* are usually interpreted as conveying "emotional colouring". This evaluative assessment is motivated as an elaboration of peoples' normal behaviour.

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Speaking figuratively across genres: discourse, metaphor, and variation.

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Keywords: Metaphor, Corpus Linguistics, Computational Linguistics, Genre

While research on metaphor has extensively considered issues of comprehension (Holyoak & Stamenković 2018) and rhetorical use (e.g. Breeze 2020), fewer studies have looked at how different discursive contexts, i.e. *genres*, might shape metaphor production (Caballero 2017). Studying such discursive variation is important, however, if we consider that all language use is situated in an activity (cf. Levinson 1979), and that genre-specific expectations on figurative speech could affect matters of processing as well as the rhetorical functions of metaphors.

To develop testable hypotheses about metaphor variation in genre, we conduct a corpus-based study comparing how the same semantic domains are found as either the *source* or *target* domains of metaphors at different rates in different genres. As such, our study contributes to the small but growing body of research on metaphor and genre (e.g. Dorst 2015; Steen et al. 2010). Concretely, we compare metaphor production in *newspapers* and *fiction*, across three semantic domains: meteorological phenomena, landscape descriptors, and physical altercation. These domains were chosen because they have both literal and metaphorical propensity and are likely to be talked about in both chosen genres. Given that newspapers and fiction follow different discourse conventions, we also expect that they might use metaphors to different degrees or ends.

We conducted a preliminary manual search on two newspapers and fiction corpora sampled from COCA (~27,000 words each). Our findings show that, perhaps surprisingly, fiction does not license more metaphors across-the-board, but that it is rather the interaction between semantic domain and genre which leads to more or less figurative language. For example, *meteorological* and *landscape* descriptors tend to be metaphorical more often in newspapers (34% and 21% respectively) than in fiction (19% and 11%), while terms of *physical altercation* are more often used metaphorically in fiction as opposed to newspapers (48% vs 23%). Some examples are given in (1)-(2).

1. *With pro-choice **winds** now blowing in politics [...]* (New York Times, 1990: COCA)
2. ***Fighting** tears, she stopped […]* (Atlantic, novel, 1990: COCA)

Our talk will delve into further discussion as to why that might be the case and present and validate larger-scale data extracted from COCA using computational techniques for metaphor detection, such as MetaNet (Dodge et al. 2015). We will use distributional word vectors to investigate the correlation between the metaphorical dimensions that semantic domains can afford (e.g. meteorological phenomena might relate to more dynamic processes), and their preferred status in each genre. Our results will thus shed more light on how speakers might construe different metaphorical domains based on the genre they encounter them in.

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The polysemy of *about* – an untypical preposition (and an adverb) – in the eyes of creative producer respondents

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Keywords: polysemy, preposition, meaning differentiation, production task, *about*

About is of relatively untypical nature as an English preposition (and adverb). There is no locative central meaning, although locative meanings do exist on the margin; in this sense it differs from non-locative *of*, *for*, and *with*. Therefore, the differentiation of meanings of *about* cannot start from nor be founded on a binary division between 'concrete' and 'metaphorical' (cf. e.g., analyses of *in*, *on*, and *at* in Rice 1996). Whether metaphorical locativity explains the polysemy of *about* and offers us criteria for a differentiation of meanings, is part of the issue here.

Also, *about* seems to be an underinvestigated preposition, neglected in many studies of English prepositions, e.g., Bennett (1975). Tyler & Evans (2003: 95) only mention it *in passim* as a paraphrase of *over* as in *cry over/about* and *talk over/about*. Even more suspiciously, it is not included in an introductory list of 28 prepositions in such a basic descriptive grammar as Huddleston & Pullum (2005: 127). Biber & al. (1999) do publish minor analytical observations on *about*, e.g., as an approximating adverb (1999: 112). Yet, as *about* turns out to be the 7th most common preposition in the Corpus of Contemporary English, it is surprising that it has not acquired more attention.

The method used here involves respondents in a creative task. When 20 American high school students participated in a differentiation production task where they were asked to produce such examples of *about* that portray different meanings, they came up with 4.15 examples on average. Due to the setting, both prepositional and adverbial uses appear. One respondent produced the following four examples.

(a) About 3 years ago I was a freshman.
(b) I don't know what you are talking about.
(c) She walked about the room nervously.
(d) I was about to hit him.

The starting assumption is that these examples could represent four hypothetically central meaning types of *about* – perhaps two more central (a and b) and two less central (c and d). The meaning types could be termed

(a) APPROXIMATIVE
(b) TOPIC
(c) CIRCULAR LOCATIVE
(d) IMMEDIATE FUTURE

The paper presents the methodology and the results in more detail. Besides searching for the collective core of the 20 respondents' creative differentiations, additional observations are directed on perceived centrality, perceived links, and paraphrases used in a paraphrasing task. Tendencies in the responding behavior may correlate with actual frequencies, but the setting also invites the respondent to produce peripheral examples. Additionally, we will juxtapose the division between prepositional meanings with the meanings of *about* as an adverb.

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The role of demonstrative determiners in spatial conceptualization – pitting demonstrative pronouns against demonstrative adverbs

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Keywords: demonstrative adverbs, demonstrative pronouns, spatial conceptualization, NP constructions, experimental methods

Research on demonstratives has increased over several years but the focus has been mostly on demonstrative pronouns (DemPron), leaving demonstrative adverbs (DemAdv) relatively scant research attention. The studies that have included DemAdvs show that DemAdvs can convey more precise distance marking than DemProns (Meira & Guirardello-Damian 2018), and are used to conceptualize the referent more as a ground than as a figure (Laury 1996). This evidence suggests that there are differences between the functions of DemAdvs and DemProns and these have not yet been thoroughly investigated. The aim of this study is to pinpoint the differences between Estonian DemPron and DemAdv in NP constructions that can be interpreted as location (example below).

Selle-s/seal	***korvi-s***	*on*	*punane*
This-DEM.PRON.INE / there.DEM.ADV.LOC	**basket**-INE	be.PRS.3SG	red.NOM

õun
apple.NOM

Literal translation: 'In this/In there basket is a red apple' ('There is a red apple in the basket')

In Estonian, both demonstrative pronoun NP (DemPronNP) and demonstrative adverb NP (DemAdvNP) constructions are possible and common. Moreover, both constructions can be used to indicate location. However, DemAdvNP constructions are more strongly connected to the spatial interpretation of the referring noun than DemPronNP constructions (Taremaa et al. 2021). In addition, in spatial usage, the DemAdvs are more strongly connected to expressing relative distance than DemProns (Reile et al. 2019). Thus, we hypothesize that a noun modified by a DemAdv (e.g., *seal korvis* 'in there basket') is more likely to be interpreted as a location than when the noun is modified by a DemPron (e.g., *selles korvis* 'in this basket') even if spatial conceptualization is possible in both constructions.

To test our hypothesis, we conducted a web-based rating task with NPs in inessive case form. The participants were asked to rate on a scale of 0–100 whether the phrase in a sentence refers to a location. The nouns in the test sentences were modified either by a DemPron *selles* or DemAdv *seal* and in filler sentences by an adjective. Altogether, 270 sentences (90 test and 180 filler sentences) were shown to and rated by the participants (N=106) one by one. In addition to DemAdvNP or DemPronNP construction, the ratings were tested for the influence of two semantic properties of nouns – the size of the referent, which have been shown to affect the choice between distal and proximal DemProns (Rocca, Tylén & Wallentin 2019), and noun concreteness, a strong factor to distinguish between DemPron and DemAdv modifiers (Taremaa et al. 2021).

Preliminary results show that the demonstratives have no effect on the ratings – regardless of the demonstrative type (DemAdv or DemPron), the phrases were rated equally high to be referring to a location. However, the size and concreteness of the referent have a statistically significant effect: i) small referents got lower ratings than large referents, and ii) more concrete referents got higher ratings than less concrete ones. These results confound with previous studies that show the importance of referents' size on demonstrative choice and indicate that the demonstrative modifier is only one of the possible parameters that contribute to location conceptualization.

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Vague quantifiers in Estonian: evidence from a picture choice task

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Keywords: Estonian, quantifiers, picture-choice-task, pragmatics

Vague quantifiers, such as *few* and *some*, are words that refer to an underspecified amount of things. They do not directly map onto an exact numeric system, but are argued to map onto a separate, approximate numeric system (Coventry et al., 2010). The mapping can be influenced by various factors, such as linguistic frequency of the expression (Newstead & Collis, 1987), the spatial arrangement of the objects in relation to background objects (Coventry et al., 2010; Newstead & Coventry, 2000), and the number of objects vs. the number of background objects (Coventry et al., 2005). There also seems to be a cross-linguistic variation in perception of vague quantifiers (Stateva et al. 2019).

In this paper, we focus on two Estonian quantifiers: *paar* 'couple' and *mõned* 'some'. Both quantifiers are used to express a small, countable amount of something, as in *Poisil on paar õuna* 'The boy has a couple of apples' or *Poisil on mõned õunad* 'The boy has some apples'. *Paar* has a strong connotation of mapping onto two objects, and similarly to English pair and German *Paar*, the Estonian *paar* also refers to entities that are composed of two parts (e.g., *paar kääre* 'a pair of scissors'). However, *paar* and *mõned* can also be used seemingly interchangeably, as in *õues on paar kraadi sooja* 'there are a couple of plus degrees outside' vs. *õues on mõned kraadid sooja* 'there are some plus degrees outside'. This study aims to pinpoint which parts of the numeric scale *paar* and *mõned* occupy, and under which conditions. We used a picture choice paradigm to investigate the scope of *paar* and *mõned*. Participants were simultaneously shown two pictures, with a sentence such as *Poisil on paar õuna* 'The boy has a couple of apples'. Their task was to match the sentence with one of the two pictures. There were 3 different conditions in the task: 2 vs. 3, 3 vs. 5, and 5 vs. 7 target objects. We expected to see *paar* consistently matched with the picture that depicts fewer objects and *mõned* with the picture that depicts the larger number of objects.

Preliminary results (39 participants) show that Estonian speakers consistently choose *paar* to represent the smaller and *mõned* the larger amount. There was a highly significant effect of the quantifier in the first (2 vs. 3 objects) and second (3 vs. 5 objects) condition ($p < 0.0001$). However, this effect disappears when a critical number of objects is reached, where both *paar* and *mõned* are judged to only be suitable to describe the smaller number of objects – in the third condition (5 vs. 7 objects) the effect barely reached statistical significance ($p = 0.047$). Despite the possibility to use *paar* and *mõned* interchangeably, we found a clear distinction between *paar* and *mõned* in the first and second condition. This is in accord with the view that small amount quantifiers tend to be better distinguished than large amount quantifiers (Pezzelle et al. 2018).

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“One new idea” constraint holds cross-linguistically even in “flat” expressions

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Keywords: one new idea constraint, information packaging, discourse, event, referent, serial verb constructions, complex nominal expressions

In this talk, we test the hypothesis that spoken language is shaped by the “one new idea” constraint. Chafe (1994:42) proposes that the human consciousness can only process at most one new idea at a time, where “at a time” means in one intonation unit. “Ideas” subsume mentions of entities, events or states, which are typically expressed by single content words such as nouns or verbs. Expressions with more than one content word, then, have the potential to challenge Chafe’s constraint. We focus in this talk on such multi-word expressions which have already in the past been suspected of encoding more complex semantics than the average English NP or VP: serial verb constructions (Pawley 1987, 2009; Givón 1991), and similarly “flat” nominal expressions consisting of several co-ranked nominals. We demonstrate that Chafe’s “one new idea” constraint holds even for flat expressions, based on an in-depth corpus study of four typologically-diverse languages in a first attempt to disentangle lexical from discourse activation in flat expressions.

To test the “one new idea” constraint, we examined 100 serial verb constructions in Kera’a (Trans-Himalayan, India) and Waima’a (Austronesian, Timor-Leste) and 100 “flat” nominal expressions in Sanskrit (Indo-Aryan, India) and Warlpiri (Pama-Nyungan, Australia) which occur within single intonation units. Each instance of a flat expression was annotated on two levels: the activation status of the lexical items involved, as well as the activation status of the idea(s) involved. Lexical items and ideas are coded as ‘new’ if they appear for the first time in a recording or text, with subsequent activation of the same lexical item or idea receiving a number indicating the distance between activations in intonation units. We follow Riester and Baumann 2017 in assuming a five-intonation-unit cut-off for prior mentions of lexical items. Ideas are tracked without a cut-off point. Examples of coding can be seen in (1-4), where the “d-level” tracks discourse activation, and the “l-level” lexical activation.

Our investigation suggests that the “one new idea” constraint can be considered to be a universal principle of information packaging in a range of typologically-diverse languages. We find that the majority of cases of flat expressions include a maximum of a single new element, whether that be on the lexical item or idea level. However, a number of examples involve more than one new element on either the lexical item level or idea level (or both), posing a potential problem for the “one new idea” constraint. These challenges can largely be accounted for with reference to a number of phenomena that Chafe discusses (1994:110-119): independent activation (1), low-content elements (2), and collocations, lexicalisations and idioms (3). The remaining challenges can be accounted for by extending Chafe’s list to capture further phenomena that are due to the typologically-diverse language structures investigated in this study including near-synonym and generic-specific structures (4). As such, we find that the “one new idea” constraint holds but requires expansion to properly account for linguistic diversity as well as careful separation of lexical and discourse-based activation.

Examples

(1) Waima'a (Amandio_monkey.085)

	aku	oo	**'keti**	**hwaka**	**'keti**	**hwaka**
	1SG	also	jump	fly	jump	fly
d-level			new			
l-level			1-same	1-same	0-same	0-same

'I also jump'

(2) Sanskrit (adapted from ŚB 4.1.5.14)

	bahu	mânuṣyêṣu	**saṃsr̥ṣṭam**
	much.ACC.SG.N	human.LOC.PL.M	interaction.ACC.SG.N
d-level	new		
l-level	new		new

'(As healers, you sought) much contact amongst humans.'

(3) Kera'a (dogstory_104)

	ikrip	**to**	**a-ne**
	lie	speak	like_this-CV
d-level	new		
l-level	new	new	4-same

'(Ano) lied…'

(4) Warlpiri (j1-0028)

	walya-jarra	=lpa	nyina-ja	**yapa**	**nyurru-warnu-patu**
	ancestor	PST.IMPF	sit-PST	yapa	old_one-group-many
d-level	new				
l-level	new			new	new

'A long time ago the old people used to live (on that).'

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The role of polysemy of English negation in the linguistically restrictive environment of the courtroom: A case study of the construal of responsibility in three Chicago rape trials

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Keywords : Critical Discourse Analysis, Negation, Polysemy

This study examines the role of polysemy of English negation markers as a rhetorical strategy for the construal of agency. It demonstrates the discursive importance of this construction in the language of defense attorneys in contemporary American rape trials. The American courtroom is a politically and ideologically charged linguistic environment that operates along a specific set of behavioral and linguistic conventions that influence not only the linguistic output of every participant in a criminal trial, but the strategies utilized by the prosecution and the defense to construe events in various ways. In the case of rape trials, Critical Discourse Analysis becomes particularly useful in light of the complex and ideologically charged cognitive models evoked in rape trials. Specifically, the concepts of gender, consent, agency, and responsibility are crucial to understanding the construal mechanisms employed in such discourse. Here, we will use Beukeboom (2014) and Beukeboom's (& al. 2010, 2019) notion of negation bias combined with Hart's (2014) approach to construal operations in order to demonstrate how variation in the use of negated propositions can be exploited to influence the construal of victims' agency in examination and cross examination by defense attorneys.

The data are extracted from a corpus of three transcripts of rape trials in the Circuit Court of Cook County, Chicago over the last ten years. The transcripts, obtained through Westlaw, were randomly selected from search results that were filtered to retrieve only trials where there was a single defendant, where sexual violence constituted the central charge against the defendant, and the defendant was ultimately found guilty. From there, two samples of negation will be manually tokenized and extracted from the corpus. First, all uses will be automatically extracted and then a manually established subsample of uses by defense attorneys while questioning complaining witnesses will be extracted. In comparing those two samples, we expect to find a prominent and marked use of negation markers in defense attorneys' discourse. This use will be shown to constitute a construal operation that frames the victims' role as responsible for the crimes committed against them. A critical interpretation of this use would be that it undermines victim credibility based on ideologically charged mental representations of agency and responsibility. These expected findings have serious implications since it can be shown that this rhetorical strategy is a result of language restrictions determined by and specific to the American courtroom.

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The Impact of Individual Learner Differences and Learned Attention on the Development of Formulaic Chunks

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Keywords: Formulaic Chunks, Second Language Acquisition, Individual Differences

Developing advanced language abilities presents a particular challenge to second language (L2) learners because of the formulaic nature of language (e.g., Howarth, 1998). In fact, formulaic language use is a 92% predictor of language proficiency (Crossley et al., 2011). While some restrictions about which words can be combined are semantically motivated (e.g., *drive a car*), many others appear arbitrary to learners (e.g., *ride a bike* vs. *drive a bike). Naturally, noticing (Peters, 2012) a formula in the input and identifying its boundaries and components is the first step to establishing a formulaic form-meaning connection (FFMC). Yet, studies have shown that learner are not aware of formulaic chunks (e.g., Arnaud & Savignon, 1997). The current investigation integrated three research areas: corpus linguistics which has established that much of language is formulaic; memory research which has shown that declarative and procedural memory contribute individual differences in L2 development (e.g., Morgan-Short et al., 2022); and cognitive linguistics inspired teaching materials which have explored explanations of polysemy and metaphorical extensions to reduce the apparent arbitrariness of language use (e.g., Bui et al., 2020; Elgort et al., 2020). study assessed whether raising learners' awareness of formulaic chunks through explicit instruction on polysemy and metaphorical extension affects a) noticing, b) the ability to identify the correct boundaries and formulaic components, and c) the ability to use formulaic chunks in writing. One hundred twenty-three A.2 and B.1 level learners of German wrote two essays. The experimental condition received instruction on polysemy and practiced noticing the motivation behind formulaic chunks. The control condition did not receive any instruction. The note-taking page was analyzed for the quantity, the completeness (semantic meaning) and the correct components (form) of chunks. Final essays were analyzed for the correct use of chunks students took notes of and chunks they had not taken notes of. All learners filled out a background questionnaire on their personal study habits and participated in a digit span test to assess working memory. Results showed that instruction on polysemy had a significant impact on note taking and on the correct use of formulaic language. The control group took mostly notes of individual words or chunks using L1 inspired translations. The experimental group took notes in form of multi-word chunks and exhibited multiple patterns: learners used formulaic chunks with an awareness of polysemy and metaphorical extensions. However, they omitted grammatical components of chunks (prepositions, reflexive adjectives), or copied components inaccurately from the input passage. These patterns were also reflected in the final essay. In addition, the impact of instruction was also significantly more effective for L2 learners who performed better on the digit span test. This finding is further explored in the context of learners' background questionnaire. These results will be discussed in light of developing an advanced bilingual lexicon and usage-based approaches to second language learning and teaching.

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Common ground and shared gesture space: Interpersonal placing acts in English

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Keywords: gesture, common ground, indicating acts, multimodality

Previous research has shown that situational and pragmatic factors interact with the use of shared gesture space in face-to-face interactions. *Shared gesture space* refers to the region of gesture space where two interlocutors' personal gesture spaces meet. In experimental settings, the construal of shared space has been shown to depend on the location of the addressee(s) in relationship to the speaker-gesturer, suggesting that gestures performed in this situationally construed spatial region are designed for the addressee (Özyürek, 2002). Sweetser and Sizemore (2008) looked at pragmatic factors interacting with contrastive uses of gesture space in an extended conversation between two American-English acquaintances and found that the speakers used shared gesture space (also referred to as "interpersonal space") when making salient conversational moves (e.g., holding the floor, shifting topics). The current study builds on previous work by examining the systematic use of shared interpersonal space in multimodal (gesture-speech) expressions.

Specifically, our study was designed to gain further insight into how interpersonal space is used by English speaker-gesturers in interaction. Based on previous research, we predicted we would find unifying functional properties across formally distinct gestures performed in interpersonal space. To test this prediction, we compared the use of three formally distinct hand gestures performed in interpersonal space: (1) the palm-up-open-hand (PUOH) configuration, (2) the palm-oblique-open-hand (POOH) configuration, and (3) circular-rotational (Cyclic) movement gestures (see Figure 1 below for examples of each). Data were collected from televised American talk show interactions. Formal and functional properties of the gesture and speech for each token were annotated by two independent coders using ELAN. Disagreements were resolved by a third annotator. Functional similarities were found across the three gesture types produced in interpersonal space. All three types were found to repeatedly occur in one or more of the following contexts: with requests, with intersubjective stancetaking (in which the speaker-gesturer was seeking alignment on an evaluation or aligning with an interlocutor's evaluation), during moves to shift the line of talk, and during moves that uptake an interlocutor's move to shift the line of talk.

Based on our findings, we propose that shared interpersonal space functions as the physical manifestation of 'common ground', defining common ground as the "mass of knowledge, beliefs, and suppositions [interlocutors] believe they share" (Clark, 1996, p. 12). We use the term *Interpersonal Place* to describe this symbolic structure, adopting the technical term Place that has been used to describe meaningful locations in space in signed languages (Wilcox & Occhino, 2016). We argue that gesturing in shared interpersonal space (i.e., evoking Interpersonal Place) constitutes an act of "placing" (Clark, 2003; Martínez & Wilcox, 2019). Placing is a type of indicating act that attracts an addressee's attention to an "object of indication" through the placement of the object in the addressee's focus of attention (Clark, 2003). The object of indication in the case of interpersonal placing acts in English is not the (physical) gesturing hands but the discursive act that is indexed by the placed hands in shared space. Specifically, we propose that interpersonal placing acts indicate that the speaker-gesturer is making an on-record move to update the common ground. Using specific examples from the data, we illustrate how interpersonal placing acts in gesture are symbolically integrated with speech and suggest cognitive-functional motivations for their variable occurrence in interaction.

Fig. 1: Examples of each gesture type examined.

Palm-up-open-hand in shared space

Cyclic gesture in shared space

Palm-oblique-open-hand in shared space

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The development of oral narrative abilities of young children in rural areas

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Keywords: narrative abilities, macro- & micro-structure, development, rural children

Prior research has documented children's developmental advancement in narrative productivity and structure from preschool to school years (e.g., Berman & Slobin, 1994; Justice et al., 2006; Khan et al., 2016); however, most studies were based on children in urban and suburban areas. With limited educational resources, and lower income levels, rural environments were found to have an impact on children's development (Clark et al., 2022); however, rural children have been comparatively understudied in terms of oral language and more specifically narrative skills. To fill the gap, this longitudinal study aimed to examine the development of oral language and narrative abilities of Mandarin-speaking children in mountainous areas of central Taiwan.

The purposes of this research were twofold: (a) to investigate whether rural children make age-related progressions on language and narrative abilities, and (b) to understand whether these children show developmental gains for all narrative aspects. Eight children were followed from kindergarten (*Mage* = 5.6) until grade 2 (*Mage* =7.4). General language (expressive and receptive) abilities were assessed yearly by norm-referenced tests (Lin et al., 2008, 2009). Also, each participant performed narrative tasks yearly, whereby picture-book-based narratives were elicited. Narrative abilities were examined in terms of narrative microstructure and macrostructure. The former comprises word diversity, type-token ratio, story length, and syntactic complexity; the latter were indexed by story grammar components, and story structure levels[1] (Glenn & Stein, 1980; Hedberg & Westby, 1993).

Results from ANOVAs displayed main effects of Age for expressive and receptive language measures, showing children's general language abilities significantly improved from kindergarten to grade 2. Regarding narrative skills, however, Age effects were not significant for microstructural measures, nor for story grammar components. Only on story structure levels, children showed age-related progressions between kindergarten and grade 1 (Figure).

Overall, our findings are consistent with the literature showing age-related advancement in young children's general language abilities. In line with Lindgren (2021), we noted that different narrative aspects develop differently in the early childhood stage. Given that narrative production draws upon not only linguistic skills, but also cognitive abilities such as organization, sequencing, and perspective-taking, it is presumably challenging for young children to integrate expressive proficiency with structural competence. Not surprisingly, the development in narrative microstructure was not on a par with the developmental gains in story structure levels, despite that children already made significant progresses in general language abilities. These together suggest that children's ability to produce well-formed stories with rich expressions is still developing in early childhood. Also noteworthy, compared with story grammar components, story structure levels seemed more sensitive to young children's changes in narrative skills. The findings are discussed in relation to socio-economic factors in rural areas (Poolman et al., 2017), and insights from studies on ontogenetic development (e.g., Karmiloff-Smith, 1985). The outcome of this study advances our understanding of narrative development of Mandarin-speaking children in rural areas.

[1] The 7 levels of story structure are shown in the figure below.

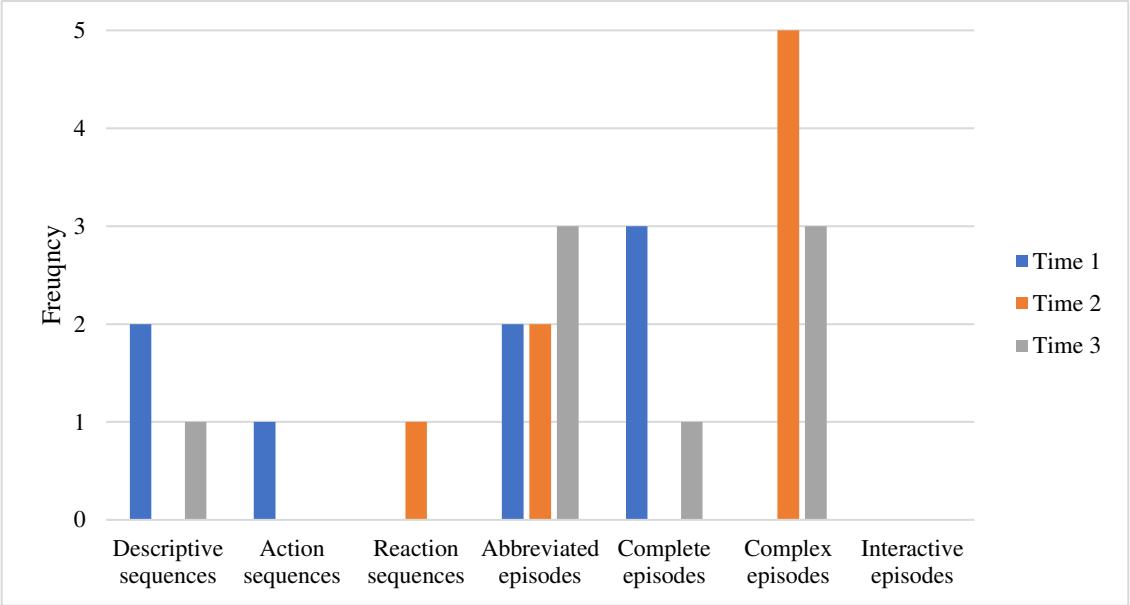

Figure. Development of story structure levels.
Time 1: Preschool, *Mage* = 5.6; Time 2: Grade 1, *Mage* =6.5; Time 3: Grade 2, *Mage* =7.4

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“The smell hit me hard, and I dropped” – The semantic roles of smell

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Keywords: sense perceptions, smell, semantic roles, embodiment, conceptualization

Sense perceptions, particularly smells, seem to be passive, something that a person experiences inactively without any volitional action by the perceiver and most certainly not by the sense perception. However, it is not uncommon to be hit – even hit *hard* – by a smell.

*I was driving along the freeway and was **hit hard** by the **smell*** (NOW corpus: New Your Post 2022)

The OED (*Oxford English Dictionary* 2002-) defines the verb *hit* in the following way: *to strike with aim or intent*. To do so, an agent is needed who intentionally executes the action. A prototypical agent acts with volition, is characterized by sentience and performs an action that changes the state of another participant (Dowty 1991). Smells are volatile, which does not seem to fit with the semantic role of AGENT or the idea of physical force. However, there are numerous cases that put smell into subject position, which often coincides with the semantic role of AGENT or clearly shows that it is the smell that is performing the action, and a physical one as that. Co-occurring verbs of the noun *smell* like *hit*, *strike*, *slap*, *punch* or *cut* have AGENT as a core frame element (FrameNet), going against the understanding of volatile and passive perceptions.

My study investigates the frame of smells and with that the semantic roles that smell can take. Working with COCA (Davies 2008-), the largest corpus of American English, and the NOW corpus (news across all English varieties) (Davies 2016-) it shows that smells are indeed sometimes conceptualized in terms of solidity or solid objects that can have a physical effect on the perceiver. An additional empirical study confirmed that people may actually experience a physical impact caused by a smell – the smell does indeed feel like a punch, so we verbalize is accordingly. In some cases, it is even enough reading or hearing such sentences to experience a physical effect.

I argue that smell is quite versatile regarding rigid characteristics and can be the AGENT, PATIENT, THEME (moved by action) or INSTRUMENT. It is not only characterized by volatility and passiveness. It can be concluded that the way we talk about smells clearly shows that they can have more of an impact on the perceiver than a fleeting encounter has. By looking at the way we talk about smells in English, it becomes clear that we need to extend our understanding of these sense perceptions as purely passive experiences, because we conceptualize them as more than that. The study at hand shows that a frame that describes smell as having the core frame elements SOURCE and PERCEPT is not complete. Our understanding of smells and the impact smells have on us is much more versatile than we have generally assumed so far.

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Semiotic trees and maximalist conceptualization: olive trees as conceptual anchors in antimafia communities

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Keywords: Proximization, current discourse space, material anchors

Context – This talk is part of a project about civil Italian antimafia discourse, in which we move away from decontextualized speaking for thinking, and examine the ongoing elaboration of concepts in a material world at the interface of multimodal language (talk and co-speech gesture) and praxis. Surprisingly, the language of antimafia practice, which breaks the law of silence imposed by a criminal organization on a territory, has remained largely unexplored from a socio-cognitive perspective, a gap we cover with embedded ethnographic field research in communities undergoing criminal intimidation.
Objectives – We operationalize cognitive linguistic concepts about container and body schemata, deictic vectors, proximization and multimodal viewpoints. The specific goal of the talk is to unveil complex culture-specific spatio-temporal meanings for trees in the civil antimafia movement in (Southern) Italy. Contrary to a post-Saussurean perspective about trees as decontextualized signifiers abstracted from concrete usage-events, we study the complex conceptual networks these trees reveal as maximally instantiated material anchors in the embodied usage events of an agri-cultural cognitive ecology. As a result, we are able to provide insights in trees as as cultural concepts in settings where mafia and antimafia actors alternatively occupy the territory, fully embedding such concepts in the spatial settings of olive yards, taking into account conceptual viewpoints of insiders and outsiders (criminal or not) which have access to the field.
Theoretical tenets – Our research, rooted in postfoundational discourse theory after Gramsci (Jessop 2020), combines three theoretical dimensions proper to cognitive grammar (Langacker 2008a/b, 2014, 2020) and proximization theory (Cap 2021, Chilton 2014) which allow to describe the material anchor tree under study: (1) represented time in usage events as a series of windows of attention (discourse spaces), inspired by Langacker's CDS model, (2) semiotic channels of speech and co-speech gesture for deictically pointing at and iconically profiling relevant conceptual things and relations in the material yard, (3) the partitioning of deictic spatial settings, in which participants in the (intersubjective) ground are conceived as in/out self/other actors in an orchard seen as a container schema.
Data – Our analysis is based on extensive embedded and participatory field research in different parts of Italy. This talk scrutinized 3 hours of video recordings, during which we interviewed activists and workers in so-called seized mafia assets, in this case olive yards which were given back to the civil society after antimafia trials, and in which activists organize official labour and socio-educational activities under ongoing mafia treats.
(Expected) results – We provide a conceptual template for understanding the at first sight natural context of the olive yard as a conceptual domain for concrete work and symbolic counterhegemonic Italian meaning construction. More specifically we provide (1) a typology for olive trees as material anchors undergoing (anti)mafia action, (2) conceptual insights in visual-material configurations in the olive yard, involging access roads, fences and visual overviews, (3) viewpoint arrangements for past and ongoing encounters between mafia and antimafia actors on the conceptual and material ground of the seized mafia asset.

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Evolution of cognitive representations: The case of Spanish object relatives

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Keywords: Construction Grammar, entrenchment, frequency, transparency, mental representations.

This study investigates native speakers' mental representations for Spanish object relative (OR) sentences and explores the relative role of frequency and transparency. Spanish ORs can appear with an optional direct object marker, 'a' + article (henceforth a-variant) or without it (henceforth plain-variant; e.g., *la niña **a la** que la abuela dibuja* vs. *la niña que la abuela dibuja* 'the girl that the grandma is painting'). Previous experimental data showed that, for 7-8-year-old children, comprehension was consistently better for the plain variant, which is more frequent in speech (Reali, 2014) but arguably less transparent. Furthermore, after receiving training on one of the variants, there was transfer of learning to the other variant, although this was only limited. The results thus provide insights about the early stages of acquisition: they highlight the role of frequency over transparency and suggest that the plain-variant and a-variant of OR sentences are not represented as the same construction but as two distinct yet related constructions. In contrast, adults' representations of this structure could be expected to differ. Firstly, transparency might prove more important in later stages of acquisition. As the more transparent variant is much less frequent, this could lead to a delayed acquisition (as seen in children's consistent preference for the plain variant) and thus any possible processing advantage driven by transparency might be delayed. Secondly, the representation of the two variants might evolve into one general, more schematic representation. This is argued based on adults' increased experience of token and type frequency (Bybee & Thompson, 1997; Goldberg, 2019), and abstraction abilities (Boyd & Goldberg, 2012).

In the present study, we examined adult speakers' comprehension of ORs in order to explore how the influences of frequency and transparency evolve after optimal acquisition. Twenty adult native speakers of Spanish were tested using the same picture selection task and the same sentences as the children in the previous study. Results showed that the adults were similarly accurate for the two variants (a-variant accuracy = 87.18%, SD = 18.06%; plain-variant accuracy = 89.94%, SD = 12.18%). This finding suggests that there may be an exposure threshold after which frequency and transparency achieve similar retrieval effects, suggesting that the frequency advantages observed during acquisition eventually reach a 'plateau'. On the one hand, transparency could be more helpful for adults, especially in more complex structures that are acquired relatively late. Nonetheless, the similar comprehension rates could equally be explained by the establishment of only one schematic OR construction in adults encompassing both variants. The findings provide insights into the process of entrenchment and the relative role of frequency and transparency after acquisition. Further research, perhaps introducing insights from artificial language learning to increase control over the input presented, will be needed to tease apart the effects that specific factors play on the acquisition and representation of highly similar syntactic structures.

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Reconsidering Metaphor as Double Metonymy

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Keywords: Metaphor, Metonymy, Conceptual mapping

There has been a theoretical shift in the boundary between metaphor and metonymy in the existing literature. Accordingly, this paper elaborates on the idea of metaphor as double metonymy. Metaphor consists of metonymy in some way (e.g., Group μ 1981; Barcelona 2000). However, the distinction between metaphor and metonymy is still not entirely clear due to disagreements regarding semantic domains; metonymic construction occurs in the intra-domain, while metaphors occur in the inter-domain. In addition, this paper attempts to provide further evidence to support the idea of (some) metaphors as being double metonymy via the analysis and exploration of several linguistic examples in the literature.

This paper employs lexical concept and cognitive models (LCCM) theory for the analysis (e.g., Evans 2009). The benefit of this model is that it helps to elucidate the relationship between figurative language expressions and encyclopaedic knowledge in the course of understanding language. I focused on meaning construction, particularly the conceptual distance between the source and the target in the LCCM framework. I modelled meaning construction using LCCM models; as a result, I found that metonymic meaning construction occurs within a single domain, while metaphor is constructed via two metonymic cognitive models. That is, the metaphorical source and the target are not directly mapped onto each other; instead, the metonymic operation occurs in each source and target domain first, and the results of each operation then match each other metaphorically.

The paper contributes to the field of figurative language research: first, this study extends, for the first time, LCCM Theory to the domain of metonymy, and further explores how it is both similar to and distinct from metaphor. Second, the paper provides a theoretical architecture revealing the ways in which individual languages, albeit with divergent bodies of encyclopaedic knowledge process different types of figurative language expressions.

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The metaphorical use of the verbs in the non-nominative subject-construction in Assamese

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Key words: Assamese, non-nominative subject construction, Cognitive Grammar, reference point, target

In the current paper, we make an attempt at a study of the metaphorical use of the verbs that are used in the so-called 'non-nominative subject construction' (cf. Subbarao 2012), sometimes called 'the experiential construction' (cf. e.g. Abbi 1990) in Assamese, a South Asian IA language spoken in Assam, the major northeastern province of India. Such a construction (henceforth, NNS Construction) is a characteristic feature of many a South Asian language and the experiencer NP in the construction is marked by either a dative (e.g. Hindi-Urdu, Telegu, Manipuri, Nepali) or a genitive postposition (e.g. Bangla). In some of these languages (e.g. Assamese, Oriya), it may, however, be in the genitive as well as in the dative as can be seen from the following examples from Assamese:

(a) *mor duk^{h} lagisil*
moi-r duk^{h} lag-isil
I-GEN sorrow-ERG be attached-PAST
'I felt sad.'

(b) *mor piyah lagise*
moi-r piyah lag-is-e
I-GEN thirst-ERG be attached-INGRESSIVE PROG-3
'I'm thirsty.'

(c) *mok bisar lage*
moi-k bisar lag-e
I-DAT justice-ERG be attached-3
'I want justice.'

As is clear from (a)-(c) above, the NNS Construction in Assamese is used to talk about experiences that are mental/emotional as in (a) above; physical/biological as in (b); and need/requirement as in (c). On the other hand, the verb used in all the three example is *lag*, the basic meaning of which is 'be attached' as is clear from the (d) below:

(d) *mor b^{h}arit boka lagil*
moi-r b^{h}ari-t boka lag-il
I- GEN leg-LOC mud- ERG be attached-PERF
'My leg has been soiled'.

Assamese, as we observe in the paper, lacks a verb like the English 'have' and thus the same construction is used to express existence/possession, however, with the verb *as* meaning 'to exist' in place of *lag* as in (e) below:

(e) *tomar gari ase*
tumi-r gari as-e
you-GEN car-ERG exist-3
'He has a car.'

From a Cognitive Grammar point of view, the genitive *tomar* 'you-GEN' in (e) is the *reference point* and the situation as expressed by the clause *gari ase* 'a car exists' the *target* (cf. e.g. Taylor 1996; Langacker 1999) in the domain of existence. We argue that this is also true of the examples in (a)-(c) above with

non-exist type predicates: the genitive and the dative subject in them are reference points and the emotion and the need predicates are the targets in the respective domains: *duk*^{h} 'sorrow', *piyah* 'thirst', respectively in (a), (b), metaphorically, as a reified *thing*, has moved to get attached to the speaker, a human, the result being a genitive marked nominal; in the case of (c), the thing is a need for something, and the nominal is marked by the dative. Thus, (a) can also be said as (f) below, where the locative marked *mor mon* 'my mind' metaphorically means a location:

(f) *mor monat duk*^{h} *lagise*

moi-r	mon-at	duk^{h}	lag-isil
I-GEN	mon-LOC	sorrow- ERG	be attached-PAST

'I felt sad.'

Thus, the NNS Construction can, as we argue in the paper, hardly be explained without recourse to conceptual metaphors and spatial semantics, the role of which is, however, not recognized on a formal syntactic approach. Thus, for example, in the examples using *lag* in (Nath 2013), a generative analysis of the NNS Construction in Assamese, the verb *lag* is glossed as 'feel', which is only an extended metaphorical meaning of the verb.

The paper also discusses the metaphorical use of the verbs other than *lag* as used in the NNS Construction in Assamese: *ut*^{h} 'rise,' *ho* 'become', and *t*^{h}*ak* 'stay'.

The primary source of the data used in the paper is the authors themselves, who happen to be native speakers of Assamese.

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A discriminative account of masculine generics and their masculine bias in German

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Keywords: discriminative learning, error-driven, gender bias, genericity

Traditionally, masculine generics in German have been assumed to be sex- or gender-neutral (Doleschal 2002). As an example, consider the grammatically masculine role noun *Chemiker* 'chemist'. Despite its grammatical gender, it is not only used to refer to male but to refer to female chemists as well, even though there is an explicitly feminine counterpart, *Chemikerin*. Regardless of the generically intended usage of masculine generics, though, research of the last two decades has demonstrated that masculine generics apparently are not neutral but biased towards a masculine reading (e.g. Gygax et al., 2008; Irmen & Kurovskaja, 2010; Misersky et al., 2019). That is, while *Chemiker* might be intended as generic, its masculine bias leads to predominantly male associations. However, which semantic features of masculine generics lead to this masculine bias is unclear.

The present study aims at filling this knowledge gap using an approach novel to this kind of research: discriminative learning. As a usage-based, error-driven approach, it follows a discriminative perspective on language, arguing that the relation between form and meaning is fundamentally discriminative (cf. Rescorla & Wagner, 1972; Wagner & Rescorla, 1972). Therefore, a word's semantics emerges by the word's resonance with the entire lexicon. In turn, then, the masculine bias of masculine generics should result from the resonance of masculine generics and all other entries of the lexicon.

Using linear discriminative learning as a specific framework of discriminative learning (Baayen et al. 2019), measures describing the semantics resulting from this resonance with the lexicon were computed. The simulated lexicon was based on 830,000 sentences from German news websites and consisted of 30,887 lexicon entries with 7,511 semantic dimensions. The extracted semantic measures gave insight into the comprehension quality, the semantic neighbourhood density, and the level of semantic coactivation of target words. Target words were 113 of those used in Gabriel et al. (2008). Making use of these words allowed us to use the stereotypicality judgements elicited in the aforementioned study to control for potential influences of world-knowledge which are not captured by our approach.

The extracted measures and stereotypicality judgements were then used in a multinomial logistic regression to predict masculine generic and masculine and feminine explicit forms of the 113 target words. The model found no significant effect of stereotypicality. The semantic measures, however, all reached significance. Overall, masculine and feminine forms are significantly different in their semantic features. For instance, masculine forms, i.e. generics and explicits, come with significantly higher comprehension quality and denser semantic neighbourhoods. Using Bayes Factors (Wagenmakers 2007), we confirmed that there is no difference in terms of underlying measures between masculine generics and explicits.

Our analysis of the underlying semantic features of masculine generics and masculine and feminine explicits demonstrates that the masculine bias of masculine generics is due to their specific resonance with other entries of the lexicon. Hence, even though masculine generics might be intended as semantically generic, their interrelation with the lexicon results in overall masculine biased associations.

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Cuteness amplifies effects of size sound symbolism: A cute /i/ is smaller than an ugly one

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Keywords: sound symbolism, iconicity, perception, cuteness, size

Sound symbolism describes that certain sounds become meaningful when combined with sensory information. One of the most prominent types of sound symbolism is "size sound symbolism". Some speech sounds, e.g. /i/, are associated with smallness, while other speech sounds, e.g. /a/, are associated with bigness (Knoeferle et al. 2017). While size sound symbolism has been well researched during the last decades (Blasi et al. 2016), there is barely any research available connecting size to other visual dimensions such as cuteness. The present investigation aims to deliver results to fill this research gap.

Cuteness, as from its biological perspective comprised in the so-called "baby schema" (Lehmann, Huis in't Veld & Vingerhoets 2013), is not only a fundamental feature of human perception and correlates with size (Kringelbach et al. 2016), but research on Japanese has shown that cuteness is also found as a factor for sound symbolism (Kumagai 2019).

Taking into account both size and cuteness, the present study aims at establishing a relation from "small" to "big" and from "not cute" to "cute" for long vowels of Standard German (i.e. /aː, ɛː, eː, iː, oː, øː, uː, yː/), providing further insight into the multimodal nature of sound symbolism.

Two online forced-choice tasks (a pilot, 21 participants; main study, 80 participants) were conducted using disyllabic pseudowords as auditory stimuli, controlling for potentially confounding lexical (Caselli, Caselli & Cohen-Goldberg 2016) and contextual (Klatt 1976) effects. In either syllable, stimuli's nuclei consisted of one of the vowels under investigation. The simplex onsets of the open syllables consisted of one consonant, i.e. /d, f, j, k/ or /r/. In total, 96 pseudowords were used. Images of phantasy creatures (van de Vijver & Baer-Henney 2014) were used as visual stimuli. In each trial, participants were shown five differently sized versions of a randomly chosen creature. The participants' task was to decide which image version matched the audio stimulus of a trial best. As cuteness judgements likely differ by participants, afterwards participants were again shown all creature images to judge them for their cuteness on a five-point scale.

The size response then entered a generalised additive mixed model regression analysis as dependent variable. Cuteness judgements, vowel quality, onset consonant types and phonological neighbourhood density were introduced as independent variables, while participant ID and age were included as random effects. Overall, /aː/ is considered bigger than all other vowels, while /iː, yː/ are considered smallest. Cuteness judgements did not show a significant effect on their own. However, having vowel quality and cuteness judgements interact, it was found that the size response of the open vowel /aː/ increased with cuteness, while the size response of the close vowels /iː, yː/ further decreased.

The present findings demonstrate that cuteness amplifies the effect of size sound symbolism. Sound symbolic effects manifest in an intricate interaction when multiple visual dimensions are considered. The present results contribute to the growing body of evidence for and the nature of sound symbolism and call for the incorporation of multiple dimensions into analyses.

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Denominal and deverbal eventuality-related nominalizations from a discriminative perspective

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Keywords: nominalizations, derivational semantics, distributional semantics, discriminative learning, error-driven approach

Eventuality-related nominalizations, i.e., nominalizations whose interpretation depends on an eventuality provided by the base word, can be deverbal or denominal. Research tends to focus on deverbal nominalizations (e.g., Barker 1998; Plag et al. 2018; Kawaletz Forthcoming). However, the semantics of denominal nominalizations are largely unknown (cf. Schneider 2023a). Verbs standardly denote eventualities and nouns usually denote entities (e.g., Van Valin & LaPolla 2002; Szabó 2015). Hence, the eventuality-relatedness of derivative and base is not as clear in denominal cases like *ozonation* (< *ozone*), *biographee* (< *biography*), and *devilment* (< *devil*) as compared to deverbal derivatives (e.g., *employee, assessment*). To gain more insight into the semantics of denominal derivatives the present study compares deverbal and denominal eventuality-related nominalizations with regard to an important semantic property: the similarity between bases and derivatives. The comparison of denominal and deverbal nominalizations will show whether the word class of the base makes a difference for their semantics.

We operationalized the semantics of deverbal and denominal eventuality-related nominalizations with *-ation*, *-ment*, and *-ee* using semantic vectors (cf., Wauquier 2020, Bonami & Guzmán Naranjo 2023). These vectors were computed using a discriminative learning algorithm (Baayen et al. 2019). The semantic vectors were then used in an implementation of linear discriminative learning (LDL, Baayen et al. 2019) to simulate a mental lexicon and, in turn, semantic resonance processes within this lexicon. From these resonance processes in the mental lexicon, two semantic measures were extracted for each nominalization: the degree of co-activation in the lexicon and neighborhood density. Besides these LDL-based measures, more traditional measures were considered as well (cf. Schneider 2023b): relative frequency of base and derivative, polysemy of the base, and, most importantly, word class of the base. To compare the underlying semantics of deverbal and denominal eventuality-related nominalizations, cosine similarities were computed. The cosine similarities then entered beta regression analyses as dependent variables, with the aforementioned measures as independent variables.

For the LDL-based measures, similar effects were found across the three suffixes. A higher degree of co-activation goes together with a higher similarity between base and derivative, whereas derivatives that live in a denser semantic neighborhood are less similar to their bases. For the more traditional measures, however, effects across suffixes, if found at all, are less consistent. The word class of the base, i.e., the variable differentiating between denominal and deverbal derivatives, only reaches significance for *-ee* derivatives and barely so ($p = 0.04$).

To summarize, our results show two things. First, the semantic relatedness of base and derivative does not differ between deverbal and denominal derivatives. Second, measures derived from resonance processes in the lexicon are better predictors of base and derivative similarity than relative frequency or the polysemy of the base. This means that in seeking an understanding of the semantics of nominalizations we need to look beyond base and derivative. Morphology emerges from the lexicon.

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'Non-inserted' meaning? A metacommunicative perspective on the conceptualization of *empty/hollow words* in English and German news discourse

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Keywords: empty words, conceptual metaphor, metalanguage, metacommunication, news discourse

Reddy's (1979) *conduit metaphor* refers to the phenomenon that interlocutors who engage in the use of metalanguage construe language itself as the conduit connecting the speaker and the hearer, and words as containers into which the speaker 'inserts' meaning which is then 'unpacked' by the hearer. While this metaphor surfaces in sentences such as *I'm struggling to get my idea across* or *Try to put your idea into different words* (cf. also Lakoff & Johnson 1980), it is also reflected in notions such as *empty/hollow words* in English, and *leere Worte* or *Worthülsen* in German. Crucially, the ordinary notion of *empty/hollow words* is not a linguistic-functional one, but an attitudinal and evaluative one: No linguistic expression functions conventionally as an *empty/hollow word* itself, but speakers assign this notion to linguistic items based on their own (negative) evaluation of the item's meaning(fulness) in context. The aim of the present study is to take a corpus-based metacommunicative approach to exploring how the notion of *empty/hollow words* is conceptualized in English and German news discourse. In particular, inflectional and derivational paradigms of relevant forms such as the English *empty* or *hollow word* and the German *leeres Wort* and *Worthülse* were searched for in various news corpora (e.g., NOW, DWDS Zeitungskorpora, etc.), and the analysis of the dataset was aimed at answering the following research questions:

1. How often are the relevant forms used in news discourse?
2. How often are concrete linguistic expressions assigned the notion of *empty/hollow words*?
3. Which words/phrases are assigned the notion of *empty/hollow words*?
4. How do the results vary across English and German news discourse?

Preliminary results indicate that while (normalized) frequencies of use are comparable across the two languages, German media discourse – in contrast to British media discourse is further characterized by the speakers' and writers' preference to relate the notion of *empty/hollow words* to concrete linguistic items. Most prominently, items assigned this notion are compounds and/or phrases such as *Teamfähigkeit* ('ability to work in a team', lit. 'team capability') and *gesunder Menschenverstand* ('common sense', lit. 'healthy human mind/wit'), which can display ambiguous conceptual blending effects in the mind (cf. Coulson & Fauconnier 1999). These and other results are discussed against the background of (a) the cognitive salience of the notion of *empty/hollow words*, (b) ambiguity in conceptual blending as a potential explanatory variable, and (c) possible genre effects of (online) newspaper articles and commentaries.

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The cognitive reality of 'talking like'

Modeling linguistic stereotype formation in preadolescents' roleplay

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Keywords: sociolinguistic stereotypes, stereotype formation, stylization, roleplay, borrowing

Background and aim | Previous studies in cognitive sociolinguistics (Kristiansen & Dirven 2008) have uncovered elements of how (socio)linguistic stereotypes (Labov 1972) emerge and develop throughout childhood. For instance, Kristiansen (2010) found that children become significantly better at locating speech samples of regional varieties of Spanish along with age. In addition, Buson & Billiez (2013) demonstrated 9- to 11-year-olds' growing ability to reflect on stylistic variation in audio samples of the same French speaker. These studies on linguistic stereotypes, however, take the linguistic form as a stimulus rather than as a research object. This is reflected in research designs from linguistic form (language) to social meaning (world). The reverse perspective, taking the social as a starting point and the linguistic as a research target, is vital to fully understand how stereotypes are created in the young language learner's mind.

Method | Adopting this reverse perspective, this paper aims to introduce and pilot a new stereotype elicitation method. Through a combination of roleplay and stylization (Coupland 2007), the method instructs (young) respondents to perform a social role (e.g. Can you pretend to be a news reader?), hereby investigating what linguistic resources (e.g. the rise of standard forms) are drawn from in this imitation process. To facilitate the imitation, respondents follow a three-tiered protocol of (1) a persona description (new name, age and hobbies) for a new social role; (2) performance of that role (creating a play) and (3) concluding interview questions.

Case study | The method is applied to a proof of concept targeting the stereotypical link between English loanwords and specific social persona in Belgian Dutch (cf. Schuring et al. 2023). In peer groups of 5, 26 preadolescent respondents (age range 7-13 y/o) follow the three-tiered protocol for 5 roles, 3 of which orient towards English (gamer, soccer player, rapper) and 2 away from it (farmer, minister).

Data and Analysis | The resulting corpus consists of 9 hours of video data, corresponding to 6022 utterances. All utterances are mined for English lexical material, which is then analyzed in terms of differences in the amount and nature of English use between English-prone roles, on the one hand, and Dutch-prone roles on the other. Regression trees (Tagliamonte & Baayen 2012) are implemented to uncover patterns of respondent age and persona performed.

Results | Our findings indicate a clear presence of English-inspired stereotypes, with performances of English-prone roles generating significantly more English elements than performances of Dutch-prone roles (see FIG 1). No age effect was identified, but instead high levels of idiosyncrasies are attested throughout the data, with wide variation in the type/token ratio and the type (role domain specific vs. non-role domain specific) of English produced.

Implications | The proof of concept on English loanword use demonstrates the new method's potential to investigate stereotypes starting from a social stimulus (here social roles). Examining the linguistic dimension of the social role imitations, this paper contributes to the cognitive investigation of stereotype formation and, therefore, sheds more light on how children develop the link between language, world and mind.

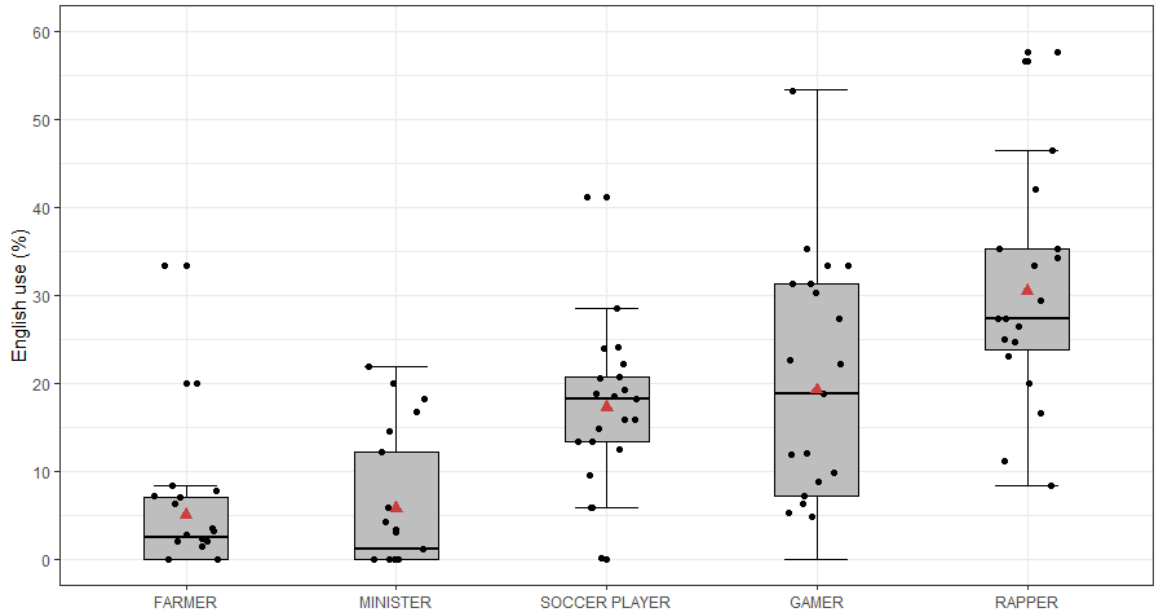

Figure 1: Boxplots of English use by social role performed. English use (y-axis) is measured proportionally relying on the percentage of utterances that contain at least one English insertion

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Farmer *Jan* featuring film star *Brad*

A cognitive socio-onomastic take on English first name stereotypes in Flanders

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Keywords: first name stereotypes, stereotype formation, English in Dutch, roleplay naming task

Background | This paper combines socio-onomastics and cognitive sociolinguistics to investigate the mental associations between first names and their bearers. Socio-onomastics studies how these names function as vehicles for sociolinguistic information, susceptible for stereotype formation (Van Langendonck 2002). For instance, Dunkling (1977) connects Mary to being "quiet" and Richard to being "good-looking". Additionally, Mehrabian (2001) found significant perceptual differences in ratings of "success in life" for first names like Lauren/Alexander (high success) versus Bertha/Skipp (low success). Adopting a cognitive-sociolinguistic perspective, the question becomes which mental processes underlie these stereotypical naming patterns.

Aim | In a bid to address this question, this paper adopts a developmental perspective, verifying whether and how children's increasing exposure to the links between names (language) and the social characteristics of their bearers (world), allows them to schematize these patterns, creating stereotypical shortcuts in the mind (Kristiansen 2010):

RQ1. (As of when) Do children draw on first name stereotypes?
RQ2. How can we explain the absence/presence of these stereotypical naming patterns?

The naming pattern under scrutiny is that of Dutch vs. English-inspired first names in Flanders, where English first names are amongst others stereotypically linked to trendiness (Bloothooft & Onland 2011).

Methodology | This paper relies on two subtasks of a larger roleplay elicitation project involving 26 Belgian Dutch-speaking preadolescents (6-13 y/o):

Naming task — Respondents are asked to choose a new first name for themselves when performing 6 English-oriented roles (e.g. gamer, film star) and 3 Dutch-oriented roles (e.g. farmer, teacher) (see Schuring et al. 2023). The corpus consists of 216 names produced by the 26 respondents attributed to 9 social roles. English-inspired names are identified using Onysko (2007)'s grapheme-phoneme mapping rule. Regression trees are implemented to uncover naming patterns and age effects.

Interview — At T+3 months, respondents are asked if they remember the names they chose (recall) and are requested to explain their name choice (motivation). The motivations for adopting a specific name are identified in the resulting corpus (3 hours of data) through qualitative thematic analysis.

Results | As concerns RQ1, our findings indicate two groups of respondents: those who rely on the stereotypical naming patterns, selecting English names for English-oriented roles, and those who do not (see Figure 1). Age does not contribute to explaining the variation. As concerns RQ2, the follow-up interviews point to three major motivations for choosing a particular name, indicative of both bottom-up and top-down stereotype-acquisition processes (Drager & Kirtley 2016): first thought answers, exemplar-based answers ("I know a gamer with that name") and direct references to the stereotype ("gamers have English names"). These answers are linked up with variation in recall.

Implications | As such, although further investigation is needed on the impact of celebrity name bearers (Zenner & Marzo 2015) and within-subject variation between the two tasks, this paper shows the promise of combining socio-onomastics and cognitive sociolinguistics to model stereotype formation of first names.

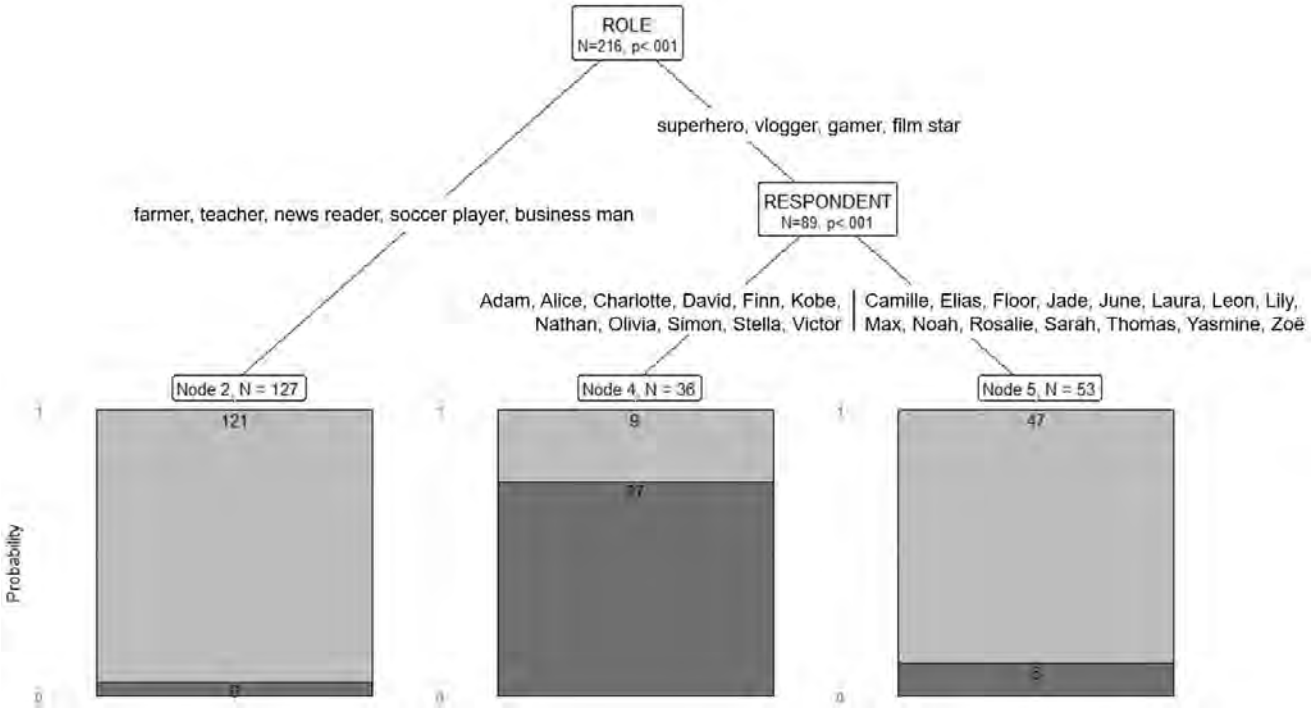

Figure 1: conditional inference tree for first name choices with English-inspired names in dark gray and Dutch + other names in light gray. The age parameter was not retained by the model.

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The role of semantics in the rivalry of *-ity* and *-ness*: Evidence from distributional models

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Keywords: Morphology, English, Affix rivalry, Distributional Semantics

The *-ity/-ness* affix rivalry (*rationality*/*happiness*) raises two core questions: (1) What determines the choice between *-ity* and *-ness* for a given base word (Lindsay, 2012)? (2) Are the two affixes synonyms? Arndt-Lappe (2014) shows that phonological, not morphological, properties of endings are decisive, but she does not consider potential semantic influences. Riddle (1985) argues that the two suffixes have different meanings, whereas Bauer et al. (2013) find no productive semantic difference.

We use distributional semantics to address both questions, hypothesizing that: (1a) If the semantics of the bases drives affix selection, a clear semantic difference between bases taking *-ity* and bases taking *-ness* is expected. (1b) This difference should even obtain for bases that end in the same suffix (e.g. *-ive*). (2a) If *-ity/-ness* are synonyms, the shift in semantic space induced by the two suffixes should be the same for both *-ity* and *-ness* derivatives. (2b) Doublets (such as *aggressivity/aggressiveness*) should show no systematic semantic difference.

To test these hypotheses, we used all pairs of adjectival bases and *-ity/-ness* derivates in the ukWaC corpus (Baroni et al., 2009) with pretrained fasttext vectors (Mikolov et al., 2017) (1546 *-ity*/1835 *-ness* pairs). Three subsets were formed: The first comprised all base-derivative pairs without doublets. The second consisted of all doublet-less pairs that contained bases ending in the suffix *-ive*, the only ending with an adequate number of both derivates (90 *-ity* and 108 *-ness*). The third subset contained all (and only) doublets. To illustrate, the base-derivative pairs *insular-insularity* and *red-redness* are part of the first subset, because neither derivative occurs in a doublet (the strings *redity* and *insularness* do not occur in the dataset). Pairs like *narrative-narrativity* and *distinct-distinctiveness*, where again the derivatives do not occur in doublets, form the second subset. The third subset contains only doublets, e.g. *aggressivity/aggressiveness* or *naturality/naturalness*. Since the bases of doublets cannot be distinctive, they are not considered in any of the analyses. Vectors are analysed with the t-SNE visualization method (van der Maaten & Hinton 2008, Arora et al. 2018), which we statistically corroborated by Linear Discriminant Analysis (LDA) (following Shafaei-Bajestan et al. 2022).

Figures (1a) through (2b) show the t-SNE visualizations. Blue circles represent the projections of the vectors of the bases with *-ness* derivates or the vectors of *-ness* derivates themselves, red crosses represent the corresponding *-ity* vectors.

Fig. 1a: all bases (no doublets)

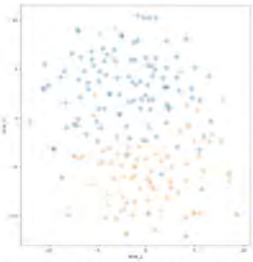

Fig. 1b: all -ive bases (no doublets)

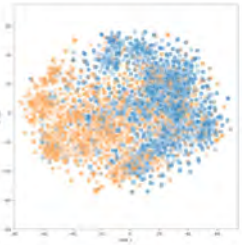

Fig. 2a all derivates (no doublets)

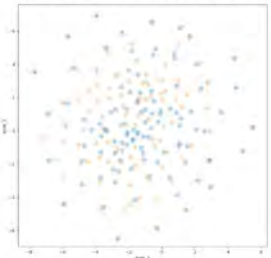

Fig. 2b: all derivate doublets

Figure 1a shows that the *-ness* bases cluster on the left of the plot, the *-ity* bases on the right, with individual and small clusters of outliers for both large clusters. Figure 1b shows similarly clear clustering for the *-ive* bases (absolute orientation of the projections is meaningless). The patterning of the data as shown in figures 1a and 1b thus supports hypotheses (1a) and (1b): the semantics of the base forms is closely associated with a preference for either *-ity* or *-ness*. Figure 2a shows that the derivates cluster in

a similar fashion as do their bases. This is in line with hypothesis (2a): the extent to which the derivates differ from their bases is similar for both affixes, as expected for synonyms. Regarding hypothesis (2b), figure 2b reveals no clustering, again in line with *-ity* and *-ness* being synonyms.

This study reveals the base semantics is a major factor in affix selection. Our results suggest that Arndt-Lappe's phonological effect of the word's endings emerges from the shared semantics of the respective bases.

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Don’t come knocking on my door: verb-framing in satellite-framed languages in usage-based perspective

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Keywords: motion events, come V-ing, construction grammar

Motion event (ME) typology remains a relevant topic in cognitive semantics, the bulk of which follows Talmy’s initial division (Talmy, 1985) into satellite- and verb-framed languages (henceforth S- and V-framed languages, respectively). S-framed languages encode the path via a “satellite” (an element outside the verbal root) and the manner in **the main verb** (e.g. *Emily **walked** into the room*). In contrast, V-framed languages encode the path via the main verb and **the manner** in an additional verb (e.g. *Emilio entró la taverna **corriendo**,* literally *Emilio entered the pub **running***). More recent cognitive research (Beavers et al., 2010) stresses the scalar nature of motion events: some languages may be classified as primarily S- or V-framed, but also enable ME encoding predominant in the other group.
However, verb-framing in S-framed languages (e.g. *he came rushing into the room* in English) remains understudied. The goal of the present paper is to describe V-framing tendencies in English using the *come V-ing* construction. Specifically, the paper aims to: a. classify verbal collocates semantically, focusing on motion verbs; b. define the meaning of the construction using Construction Grammar (Goldberg, 2006); c. quantify the attraction and repulsion of verbs to the construction using collostructional analysis (Stefanowitsch, 2018).
Using the BNC 2014 (spoken part, via SketchEngine, Love et al., 2017), I retrieved all *come V-ing* constructions. After manually filtering irrelevant concordance lines (e.g. repeats), I listed all the *V-ing* collocates occurring in the construction, carried out a collostructional analysis (using the R script provided by Flach, 2017) and classified them semantically into motion and other verbs.
In addition to discussing the collostructional strength of the *V-ing* collocates, the paper presents the following findings:

- With motion verbs (e.g. *run*), the construction specifies the manner of movement. Additionally, it takes on an additional aspectual meaning: the construction appears to extend the duration of the motion event, cf. *you come running back to the house*, as opposed to *he ran to the house*, which focuses on the endpoint. Hence, speakers have two constructions to choose from based on the preferred aspectual profiling, while maintaining the venitive meaning.
- Excluding motion verbs, the *come V-ing* construction is used to describe the accompanying circumstances of the motion event, e.g. *knocking* in *oh he used to come knocking on the door sometimes*. This construction is therefore not equivalent to *he used to knock on the door*.
- A strong preference for the present tense (84 of 154). The construction is often used for narrating a past event using the present tense (*he used to come in from work and come running over*).

The present paper indicates possible future directions of motion event research. Expanding it further to include other languages, I intend to build a usage-based model of motion events based on their syntactic, morphological, and semantic properties used in expressing movement.

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Blended Origo – Deixis in Virtual Reality

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Keywords: deixis, origo, co-presence, computer-mediated communication, blending theory, Social Virtual Reality

Empirical studies on communication in Social Virtual Reality (SVR) have shown that the immersive qualities of VR technology – the sense of presence and a sense of embodiment through increasingly realistic motion tracking and avatars (Kilteni et al 2012) – have a strong impact on verbal interactions in this new medium (Senkbeil et al. 2020, Stukenbrock & Auer 2022). While using VR, our minds experience a virtual space as (almost) real, while our bodies remain in the physical world, which instantaneously doubles our possibilities for communicative and bodily interactions with people in our virtual and physical vicinities. Misunderstandings and moments of linguistic creativity are observable, and many of them revolve around ambivalent locations, doubled 'bodies', and issues while coordinating attention. In other words: they concern deixis.

This paper presents the analysis of the usage of deictic terms in authentic communication recorded in SVR (in English and German) by speakers involved in a multilingual 'escape-the-room'-style multiplayer game. It demonstrates that the unusual communicative circumstances in immersive VR directly affect a speaker's origo, the deictic zero-point of orientation in space and time (Dancygier & Sweetser 2012, Stukenbrock 2014). While traditional deixis theories have implied that a person's mind and body are naturally and always present in the same location in space-time, VR technology undermines this default case originally observed in analogue settings (Meyer & Jucker 2022). The data shows that hybrid and blended forms of deictic referents are observable regularly.

As speakers adapt to new cognitive circumstances in a new medium, the cognitive linguistic toolbox describing their communicative reactions needs to do the same, so this paper concludes in proposing the term blended origo to understand the cognitive state brought forward by communicatively interacting in two 'realities' simultaneously. It draws on Blending Theory (Fauconnier 2003, Turner 2019), and on Dancygier & Sweetser's (2012) and van Krieken et al.'s (2019) work on "blended viewpoints", and combines these insights with current pragmalinguistic perspectives on deixis in spontaneous, multimodal, technology-mediated communication (e.g. Fricke 2014; Auer & Stukenbrock 2022).

Beyond the concrete use case of (Social) VR, this conceptualization is intended to contribute to the discussion on the intersection of cognition, body, and increasingly immersive technologies, particularly concerning the growing impact of the (digitized) body as an authentic and potent substrate of communication in the digital realm.

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Linguistic analysis of the scarcity mindset: A corpus-based LIWC study of the United Nations General Debate (1987-2020)

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Keywords: Scarcity mindset, Corpus-based study, United Nations General Debate

It has been found that scarcity impedes cognitive function (Mani et al. 2013). Based on this finding that the lacking resources occupy the poorer people' cognitive capacity, it is hypothesized that the cognitive load due to lacking money may be linguistically manifested as the expressions related to money (such as business, pay, price, market) and lacking (such as hungry, don't have, didn't have) in the poorer people's language. This study tests the hypothesis with a corpus-based analysis of the United Nations General Debate (UNGD), and the hypothesis can be more specifically stated as follows: The lower-income countries (LIC) tend to present more "money" and "lack" categories at the United Nations General Debate than higher-income countries (HIC).

The analysis is based on the corpus of 6,096 speeches delivered from 1987 to 2020 at the UNGD (Jankin Mikhaylov, Baturo & Dasandi 2017), altogether 14,300,539 words. According to the income categorization by the World Bank, 2,733 speeches (6,313,579 words) are from HIC, and 3,362 speeches (7,986,960 words) are from LIC. The two groups of speeches are analyzed with Linguistic Inquiry and Word Count (LIWC), a psycholinguistic tool that connects psychological theories with linguistic expressions. In LIWC, the words that describe a particular domain are "categories". The normalized frequencies of the categories "money" and "lack" are computed for the two groups of speeches. The scores on the three categories are compared between LIC and HIC with Mann-Whitney U tests and visualized with ggplot2 in R.

The results suggest a significant difference between HIC (0.79 [0.51, 1.20]) and LIC (0.99 [0.67, 1.35]) on the use of "money" categories ($P<0.001$), and the difference between HIC (0.14 [0.07, 0.24]) and LIC (0.16 [0.08, 0.27]) on "lack" categories is significant as well ($P<0.001$). A circular heatmap with complete-linkage clustering is also generated for the 194 countries (Figure 1), and it is observed that the cluster showing more frequent use of "money" and "lack" categories is comprised of more LIC than HIC. The diachronic analysis for "money" categories (Figure 2) and "lack" categories (Figure 3) indicates that the difference between LIC and HIC is relatively stable from 1987 to 2020. The LIC shows the more frequent use of "money" categories than HIC on 28 years over the 34-year period (82.4% of the time) and of "lack" categories on 29 years out of the 34 years (85.3% of the time).

The results confirm the hypothesis of this study. It is argued that with the scarcity mindset at play, the LIC more often see the economic dimension (Shah et al. 2018) and thus use the "money" categories more often than HIC in their UNGD speeches. The cognitive load created by scarcity can be linguistically manifested as the "lack" categories with anxiety over lacking (Mani et al. 2013). This finding may shed light on how the scarcity mindset works in the correlation between wealth and language at UNGD.

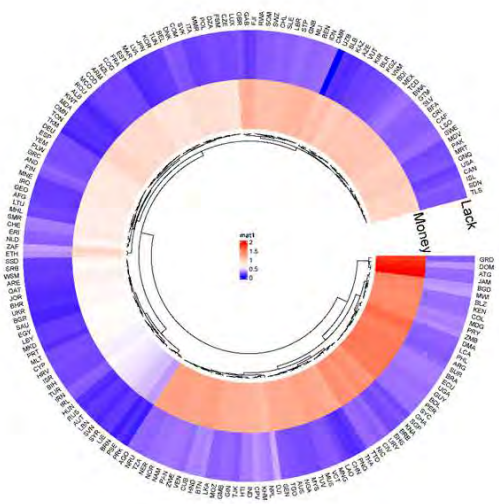

Fig. 1: A cluster heatmap of the 194 countries on the "money" and "lack" categories

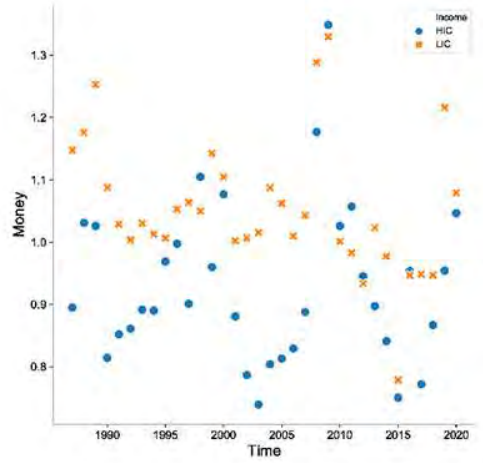

Fig. 2: A diachronic comparison of "money" categories between HIC and LIC

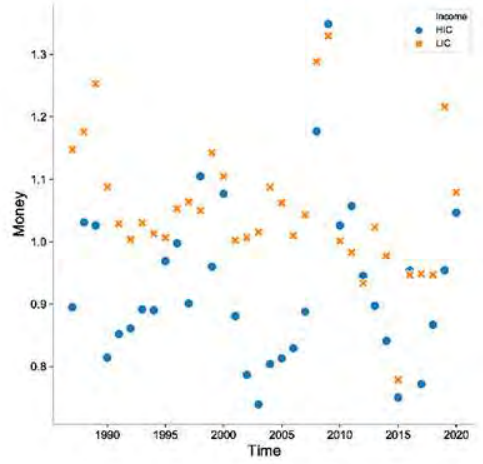

Fig. 3: A diachronic comparison of "lack" categories between HIC and LIC

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A Cognitive Linguistic Approach to "Emotional Effects" of the Present Perfect Progressive

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Keywords: *Present Perfect Progressive*, *emotional effects*, *non-continuative uses*, *temporal structures*, *mental burden*

Numerous studies on tense lump together the Present Perfect (PP) and the Present Perfect Progressive (PPP) and categorize them into some uses. One such comprehensive study is Declerck (2006), who divides PPs/PPPs into three categories: the "continuative" use describes a situation continuing until speech time (S); the "indefinite" use a situation occurring at some time before S; and the "up-to-now" use a situation/repetition of situations reaching the present time (excluding S). However, Onions (1929) and Jespersen (1931) observe that the "non-continuative (indefinite and up-to-now)" uses of PPPs, not PPs, can represent negatively-valued emotions, such as surprise or annoyance (e.g. (1) and (2)).

(1) Someone has been tampering with this lock. [indefinite use] (Onions (1929:113))
(2) Your little boy has been jumping and shouting for the whole morning. [up-to-now use] (Chen (1982:183))

No studies have (i) defined such phenomena with statistical support or (ii) elucidated their occurrence mechanism.

For (i), we classify negatively-valued PPPs into the lexical and contextual types, viewing only the latter as causing "emotional effects," those to be explained in terms of temporal structures. In 10 novels, 69 out of 114 PPPs are non-continuative; 25 of them imply emotional effects. For (ii), only Shimura (2020, 2021), integrating Cognitive Grammar (Langacker 1991, 2008; De Wit 2017) with a general tense theory (Wada 2001, 2019), attributes such marked effects to the marked temporal structures of non-continuative PPPs using metaphors/analogy. However, it remains unanswered why such markedness slants to negative values. To answer this, we refine her temporal structures.

The temporal structures of indefinite and up-to-now PPPs are presented in Figures 1 and 2, respectively. The event time of *have* (representing a "resultant state"), E_1, coincides with S; that of *been* (a schematic verb serving as a "connector to the timeline"), E_2, is prior to E1; that of *-ing* (denoting an ongoing situation), E_3, coincides with E_2. The temporal focus (TF) is put on the most salient event time. The maximal scope (MS) embraces an overall content involved; the immediate scope (IS) subsumes the foregrounded segment of the MS, including the three event times. Because PPPs express imperfectivity of present-participle situations due to the property of the progressive, i.e., internal viewpoint, the internal part of the situation holding at E_3 is profiled.

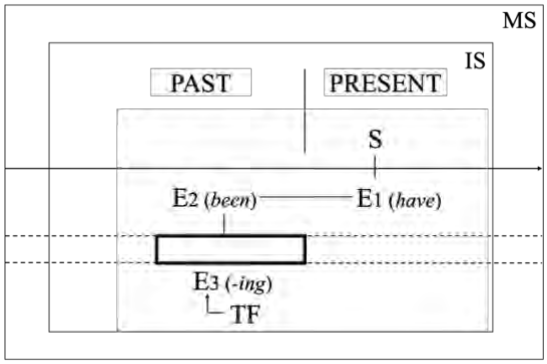
These temporal structures can clarify how the emotional effects arise. Because the three event times are within the IS, their relationships must be considered. The situations at E_1 and E_3 are indirectly connected via E_2, so their relationship must be inferred, because the situation at E_3 is interpreted as imperfective, and the temporal structures do not assure its reaching E_1 at S. Such an inference process produces "mental burden" for the interpreter, which can evoke negative values. Therefore, non-continuative PPPs have a strong inclination to negatively-valued emotions when accompanied by emotional values.

This analysis is indirectly supported by a strong tendency of the *être en train de* construction (e.g. (3)) to show emotional effects (Franckel 1989; Oguma 2001).

(3) Attention! Il y a ton mouchoir qui est en train de tomber!
'Watch out! Your tissue is in the process of/on the point of falling!"

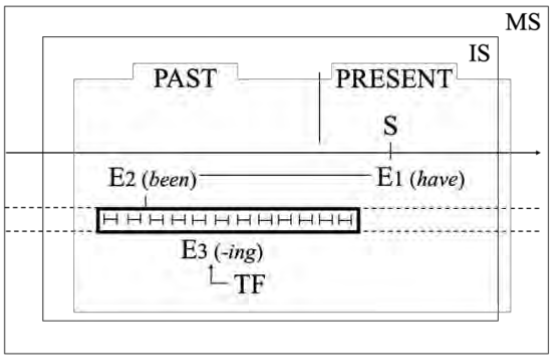
Based on Oguma's claim, its temporal structure is schematized in Figure 3, where the profiled process does not reach its goal, while both are in the IS and their relationship must be inferred. This invokes mental burden, causing emotional effects.

Fig. 1 The Indefinite Use of the PPP



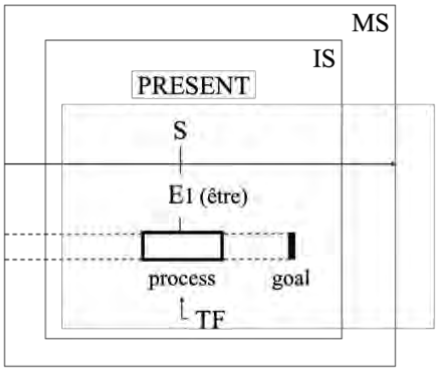
※ The profiled situation is enclosed by the heavy lines.

Fig. 2 The Up-to-now Use of the PPP



※ The profiled situation is enclosed by the heavy lines.

Fig.3 The *être en train de* construction



※ The profiled situation is enclosed by the heavy lines.

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Does Japanese have language-specific sound symbolism? A comparison with English and French.

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Keywords: sound symbolism, cross-linguistic variability, voicing in obstruents, hardness

Sound symbolism, or the inherent connection between linguistic sounds and perceptual properties (Hinton et al. 1994; Köhler 1929/1947), has been assumed to be universal. For instance, voiceless obstruents like /k/ are associated with angular shapes cross-linguistically, as the "bouba-kiki" effect suggests (Ramachandran & Hubbard 2001). Since sound symbolism points to non-arbitrary aspects of linguistic signs, it can contribute to the cognitive-linguistic inquiry into language. However, it has recently been suggested that cross-linguistic variability may exist in at least some aspects of sound symbolism. For example, English and Japanese speakers associate voicing in obstruents with the property of "hardness" differently: English speakers tend to perceive voiceless obstruents (e.g., /p/) as "harder" than voiced obstruents (e.g., /b/), while Japanese speakers tend to have the opposite perception (Shinohara et al. 2017, Kumagai et al. 2022). The current study addresses this understudied issue of cross-linguistic variability in sound symbolism.

Building upon previous findings, we explored how French speakers associate voicing in obstruents with "hardness" to see whether French is grouped with English or with Japanese. In particular, we tested whether French speakers perceived voiced obstruents as "softer" than voiceless obstruents, as English speakers do, or if they perceived voiced obstruents as "harder" than voiceless obstruents, as Japanese speakers do. To this end, we conducted two online experiments.

In Experiment 1 (preliminary experiment), 18 disyllabic pseudo-words with the CVCV form, completely balanced for voicing in consonants (voiced, voiceless), places of articulation (bilabial, alveolar, velar), and vowels (/a, e, o/), were randomly presented to 70 English speakers on web pages. Each stimulus had a word-final /i/, as in /popoi/, so that none of them were existing words. Each participant evaluated how hard or soft each word sounded on a five-point scale, ranging from "very hard" to "very soft." Statistical analysis of the results showed that voiceless obstruents were perceived as significantly harder than voiced obstruents ($p < 0.01$). Experiment 2 asked the same questions of 76 French speakers. Very similar results were obtained: The French-speaking participants tended to evaluate voiceless obstruents as harder than voiced obstruents ($p < 0.01$). These results contrast with the previously reported tendencies of Japanese speakers to perceive voiceless obstruents as "softer" (Shinohara et al. 2017).

In conclusion, our results demonstrate that French-speakers are similar to English-speakers in terms of their perceptions of the sound symbolism of "hardness." The "voiceless–hard" association seen in these languages is natural because the tendency is in line with the "sonority hierarchy," in which voiced obstruents are higher in sonority than voiceless obstruents (Parker 2002), and with the previous finding that sonorants tend to be associated with softness (Shinohara & Uno 2022). On the other hand, Japanese may have language-specific tendencies in the sound symbolism of hardness, perhaps motivated by the systematicity in the structure of mimetics (Akita 2016). Japanese mimetics have systematic oppositions in which voiced obstruents mean harder, heavier, larger, or darker properties than voiceless obstruents do (Hamano 1998). This systematicity may be motivating the language-specific sound symbolic associations seen in Japanese.

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The many meanings of *rasa*: Indonesian perception verb used for 'taste' and 'touch' which also means 'to think' and 'to feel'

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Keywords: perception verb, polysemy, semantic extensions, collostructional analysis

Perception verbs can have intrafield or transfield extensions (Viberg 1983; San Roque et al. 2018). The former refers to the extension within the domain of perception, whereas the latter refers to the extension to the domain outside of perception, e.g. cognition. The paper deals with the Indonesian perception verb used for taste and touch which also has semantic extensions to the domains of thinking and feeling. The basic meaning of the root *rasa* is 'taste' (Stevens & Schmidgall-Tellings 2008; KBBI 2016). *Rasa* can also refer to the perception of touch in a broad sense (Winter 2019: 14–15). Additionally, the Indonesian perception verb *rasa* 'to taste' or 'to touch' can have semantic extensions to the domain of cognition 'to feel' (1) and 'to think' (2); not *lihat* 'to see' as in English (Sweetser 1990) or *dengar* 'to hear' as in Australian languages (Evans & Wilkins 2000).

1	*Tapi*	*Izzah*	***rasa***	*selamat*	*dan*	*damai*
	but	Izzah	***rasa***	safe	and	peace
	dengan	*rangkulan*	*erat*	*Haris.*		
	with	embrace	tight	Haris.		

'But Izzah **feels** safe and peaceful in Haris's tight embrace.'

2	*Karena*	*jujur*	*saja*	*saya*	***rasa***	*yang*
	because	honest	only	1SG	***rasa***	REL
	nama=nya	*Badan*	*Anggaran*	*ada*	*otak-otak=nya.*	
	name=3SG	agency	budget	EXIST	RED-brain=3SG	

'Because to be honest, I **think** that there are stooges (lit. brains) in the Budget Committee.'

The roughly synonymous meanings of 'to feel' and 'to think' conveyed in the Indonesian sensory perception verb *rasa* 'to taste' or 'to touch' is grounded on the Indonesian cultural model which sees *rasa* as the cognitive faculty used to describe the "intuitive aspects of reality" (Stange 1984: 114). Utilizing the Indonesian corpus from Leipzig Corpora Collection (Goldhahn et al. 2012), we analyze the distribution of the semantic domains of different forms of verbs based on *rasa*: COGNITION (including the sub-domains 'to feel' and 'to think') and PERCEPTION (including the sub-domains 'to taste' and 'to touch'). The paper will discuss the results of multiple distinctive collexeme analysis (Stefanowitsch & Gries 2003; Gries & Stefanowitsch 2004; Gries & David 2007) that reveal certain semantic (sub-)domains which can be strongly attracted to certain verb forms. Overall, the verb forms are significantly used in their semantic extension to COGNITION compared to PERCEPTION. While there is no significant difference found between the use of the verb forms for 'to feel' and 'to think' (sub-domains of COGNITION), the distribution of the verb forms in the PERCEPTION domain is significantly predominant for the 'touch' reading than for 'taste'.

The paper aims to contribute empirically to the research on polysemy in general and the ongoing research on semantic extensions of perception verbs in particular.

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An exploratory corpus analysis of English change-of-state verbs used to talk about quantity

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Keywords: change-of-state verbs, numerical communication, quantity, usage-in-context, source-path-goal, corpus analysis

People use a range of verbs to reference changes in quantity, such as speaking of “rising prices” or “shrinking revenues”. When doing so, the direction of change is generally encoded in the verb itself (e.g., “increase” versus “decrease”), and language users can then optionally also express where the change has come from (“births have increased from 5%”), its magnitude (“revenues grew by 10%”), or the endpoint of the change (“revenue went up to 48 million”), similar to how uses of spatial verbs can vary in whether sources, paths, or goals are encoded (Verkerk, 2017; Georgakopoulous, 2018; Stefanowitsch, 2018).

This study investigates usage-in-context for 16 English change-of-state verbs, including verbs that are clearly numerical in nature, such as “increase” and “decrease,” as well as verbs referencing vertical movement, such as “rise” and “fall,” and verbs that refer to changes of size, such as “contract” and “expand.” We are interested in mapping the verbs’ collocational patterns, in particular with regard to semantic information related to change. For that, we performed a large-scale corpus analysis of four corpora: two large-scale reference corpora (British National Corpus and Corpus of Contemporary English) and two corpora we expected to be numerically dense (the Coronavirus Corpus, and the Jena Organization Corpus). We extracted 100 concordances per verb per corpus, yielding a total of 6,333 observations (some verbs were not sufficiently attested). We manually annotated the concordances for whether 1) the usage is quantitative or not, 2) and whether source, magnitude, or target is explicitly mentioned, and 3) whether any of the latter involve numerals.

Our results show that, across the four corpora, more than half of the verb usages is quantitative in nature (57%). The majority of quantitative usages do not encode source, magnitude, or target at all (68%). Magnitudes were encoded most often (14%), compared to targets (9%) and sources (<1%). This is similar to investigations of purely spatial language, which have shown that sources are not often encoded (e.g. I climbed *onto* the roof vs. I climbed *from* my room *onto* the roof; see Verkerk, 2017; Georgakopoulous, 2018; Stefanowitsch, 2018). In our talk, we will discuss verb-specific preferences, particularly with respect to whether vertically oriented or size-related verbs are more or less likely to describe change of countable or uncountable quantities, and whether these quantities are more or less likely to be abstract for certain verbs.

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Negative conditional constructions in English: A usage-based perspective

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Keywords: conditional clause, corpus linguistics, exceptive, negation, usage-based linguistics

Negative conditional constructions are constructions in which the absence of one state of affairs is a condition for the interpretation or realisation of another. In English, the two main ways of expressing a negative conditional clause are by an *unless*-clause or a negated *if*-clause. For example, in (1), not being mistaken is an epistemic condition for interpreting the statement about who 'this' belongs to, and in (2), not raining is a content condition for heading to the beach (see e.g. Sweetser 1990; Dancygier & Sweetser 2005).

(1) Unless I'm mistaken, this belonged to Lee.
(2) If it doesn't rain tomorrow, I will head to the beach.

In this presentation, English negative conditional clauses are examined from a usage-based constructional perspective (e.g. Diessel 2019; Goldberg 2019). The focus will be on examining the extent to which negative conditionals form a network of conventionalised constructions, as well as the ways in which these constructions are used across genres. The latter perspective will shed light on the discourse functions of negative conditionals.

Previous research has argued that negative conditionals stand apart from other conditionals in a number of respects. In many languages, there is a separate marker for negative conditionality, such as unless (see also Montolío 2000). *Unless*-conditionals have been claimed to predominantly appear after their main clause, unlike *if*-conditionals (Dancygier & Sweetser 2005). Semantically, at least some *unless*-clauses are more like exceptives than conditionals (Geis 1973; von Fintel 1992; Declerck & Reed 2000). Furthermore, *unless* only rarely allows counterfactual readings. However, the corpus evidence for such claims is either scant or unsystematic. Furthermore, corpus studies of other types of conditionals have had very different results, presumably on the basis of genre: for example, the proportion of initial *if*-clauses has varied from 53 (Diessel 2001: 444) to 82 per cent (Ford & Thompson 1986: 362), and the predominant semantic domain of conditional clauses can be anything from content to speech act in a given register (Athanasiadou & Dirven 1997).

To place the study of negative conditionals on a firmer empirical footing, this presentation will examine *unless*-clauses and negated *if*-clauses from the perspective of genre variation. To do this, the study will investigate the use of negative conditionals in the Corpus of Contemporary American English (COCA), a multi-genre reference corpus of present-day American English. Attention will be paid to the position of the negative conditional clause with regard to its main clause, the type of conditional relation, the tense of the conditional clause, its reality status, and the givenness of its content.

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Who's afraid of homophones? An experimental study on homophony avoidance between present and past tense in Dutch

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Keywords: cognitive grammar, language change and grammaticalization, language processing

Homophony avoidance is often cited as a motivation for certain patterns in language change. Throughout the history of Dutch, several instances of morphophonological change have been claimed to have occurred or been inhibited to avoid homophony between present and past tense (Van Bree 1987; Van Loon 2014). For example, the schwa apocope in Early Modern Dutch that affected nearly all Dutch words did not take place in weak preterites (*hoopte* PST-3SG 'hope'), which would render them indistinguishable from the present (*hoopt* PRS-3SG). It did take place however in irregular preterites (*kocht* < *kochte* PST-3SG 'buy') which remained distinguishable from their present counterparts (*koop* PRS-3SG) without schwa.

Yet, how plausible is this homophony avoidance explanation? Do language users actually take this into account? While the topic is not uncontroversial (King 1967, Lass 1987; 1997a; 1997b: 355-361, Sampson 2013), initial experimental research indeed suggests homophony avoidance to be a cognitively plausible explanation for certain patterns in language change (Kaplan 2011; Kaplan & Muratani 2015; Yin & White 2018). In this paper, we seek further experimental substantiation of homophony avoidance as a cognitive factor in language change. We specifically test whether language users avoid homophony between present and past tense. In a Wug-test, we focus on Dutch non-verbs ending in a dental which, when used in the preterite plural, become homophonous with the present plural (compare *vatten* PST-3PL to *vatten* PRS-3PL 'understand'). Language users can avoid this homophony by switching to a perfect (*ze hebben gevat* PERF-3PL) which has become semantically interchangeable with the preterite in many contexts in present day Dutch.

Participants (n=255) were presented with a forced-choice-task requiring them to choose between the perfect or preterite of non-verbs to fill a blank in a stimulus sentence. The non-verbs either showed a double dental, causing the preterite plural to be both homophonous and homonymous with the present plural (compare vatten PST-3PL to vatten PST-3PL), a single dental, causing the preterite plural to be homophonous, but not homonymous with the present plural (compare duldden PST-3PL to dulden PST-3PL 'tolerate') or no dental, causing no homophony. Two between-subject conditions were created: one with only singular verbs and one with only plural verbs. Half of stimuli sentences in each condition contained the explicit past tense marker gisteren 'yesterday', while the other half did not. We hypothesized that the presence of such marker would diminish the ambiguity in the sentence by rendering the homophony less problematic.

Results show that avoidance of the preterite is indeed highest for verbs with a double dental. This effect is largest for plural verbs without explicit adverbial past tense marker, followed by plural verbs with explicit marker. For singular verbs the effect was not significant. This suggests that language users indeed try to avoid homophony. More generally, this paper contributes to a better understanding of the role of cognition in community wide processes of language change.

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Cognitive aspects of leaders and laggers in syntactic change

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Keywords: syntactic change, lifespan change, complementation, multifactorial classification models, complex adaptive system

The individual is often neglected in the study of language change, with their influence considered "reduced below the level of linguistic significance" (Labov 2012: 265). This view, however, is too narrowly focused on social identity, excludes the influence of individual differences, and leaves important questions unanswerable: Does individual (cognitive) processing impact the spread of a variant at the community level, and if so, how/why? How do individuals accommodate change in their understanding/use of the language? To answer these questions, a detailed study of individual behaviour is necessary.

This paper aims at providing such a detailed study of twenty-nine writers across two generations born around the 1660s and the 1710s respectively. It provides an investigation of changes in their use of the emerging nonfinite and more established finite complement clause (CC) variants with the complement-taking predicates (CTPs) *remember* and *forget*. In the type of variation shown, the newer variants, first attested in the late fourteenth century, coexist with the established variants, complementing the variationist literature on replacement of the older counterpart (e.g. Nevalainen et al. 2011). Existing theory suggests that syntactic change often resides below the level of awareness (Labov 2001:28), making this an ideal case to study the role of cognitive representations and their flux due to the lowered influence of social variables. With this analysis of an unstudied type of syntactic change from a new cognitively informed perspective, we aim to add to Fonteyn & Nini's (2020:18) usage-based model of individual variation. Further, in studying long-term variation we seek to contribute to a theory of language as a complex adaptive system (Beckner et al. 2009).

Data consist of >500,000 words per individual, annotated for CCs featuring *remember* and *forget*. Each instance is coded on eight functional variables (semantic, structural and discourse). Multifactorial classification models are then employed to determine which language-internal factors an individual uses to condition the variation in their linguistic output, and to compare the relative importance of the constraints across both individuals and generations.

Preliminary results from >1,200 instances show that individuals organise their behaviour more along the lines of smaller, partly idiosyncratic systems than larger semantic groupings, creating substantial degrees of inter-individual variation; we argue this correlates with continued long-term variation. There is evidence for increased importance of functional constraints, e.g. clause meaning, in the later generation. A drop in the degree of idiosyncrasy between the earlier and later generation shows potential standardisation at play. Finally, tentative evidence is found that a minority of individuals predict the next generation's usage patterns, perhaps marking themselves as 'way-pavers'. The predictive individuals also show in-group similarities in lifespan usage patterns, implying some possible similarity in their style of processing and accommodating variation. These results already allow for a strong discussion of the impact of interindividual differences in cognitive representations on long-term population-level language change, as we find that long term variation on the generation level is both facilitated and shaped by heterogeneous idiosyncrasies on the individual level.

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Verbs of striking in Dene languages

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Keywords: Metonymy, Lexicalization, Verbs, Semantic change, Comparative-Historical linguistics, Dene languages

This study examines the semantics of Dene (Athapaskan) verbs of 'hitting' and 'striking' from a diachronic-comparative perspective, focusing especially on patterns of lexicalization and semantic change. Drawing on the theory of metonymy (Radden & Kövecses, 1999; Ruiz de Mendoza Ibáñez, 2003, 2011; Paradis, 2011) as well as theories of lexical structure (Pustejovsky, 1998; Paradis, 2005), this paper expands on previous studies on this subject in Dene languages (Snoek, 2022) aiming to substantiate the claim that Dene verbs have become increasingly schematic over time. The Dene languages are spread over a discontinuous territory in western North America. The largest continuous area where these languages are spoken stretches across interior Alaska, the Yukon and across much of the Canadian subarctic boreal forestland west of the Hudson Bay. South of the subarctic, Dene languages are spoken in the intramontane and plains regions of Canada. Intriguingly, languages belonging to this family are also found in two other geographically distant and separate regions: along the Pacific Coast in Oregon and Northern California and in the southwestern United States. The data considered in this analysis come predominantly from six Dene languages, each representing an areal and likely phylogenetic grouping in the language (Snoek, Stang & Rice, 2022): Koyukon (Alaska), South Slavey (Subarctic Canada), Carrier (Intramontane Canada), Tsuut'ina (Plains), Hupa (Northern California), and Navajo (American Southwest). The structure of the sample is motivated by the possibility of reconstructing earlier states of the verb forms under investigation as well as gaining insight into the stages of semantic evolution of these forms. The data are drawn from published resources and fieldwork notes. In this context, I would like to acknowledge the immense contribution of the speakers of Dene languages past and present to the rich datasets now available to us for study. Dene verbs contrast with verbs of 'striking' such as English *hit*, German *Schlagen*, or Warlpiri *pakarni* in that there is no form of the verb that lexicalizes 'hitting' or 'striking' in the absence of specifications of the object used in the action. The majority of Dene verbs of striking specify the instrument used in striking explicitly, e.g. Carrier *huyunteztsel* 'they felled (it) with axes'. Here, the final syllable of the verb construction represents the stem which shares an etymological origin with the noun *tselh* 'axe'. In contrast, other verb constructions draw on the system of classificatory verbs to indicate physical properties of the instrument *yegheet'ekk* 'he beat it repeatedly with a stick'. In this example, the instrument is encoded lexically by the stem *-t'eek* which can be used to describe the rapid movement of rigid elongated objects of many kinds. Following suggestions in Snoek (2022) and Fortescue (2006), the paper argues that Dene verbs of striking tendentially evolve from forms overtly encoding the instruments used in striking to more schematic meanings, all the while preserving semantic properties of manner and shape through metonymic meaning shifts. In addition, the results of the study are discussed in the context of typological and cognitive linguistic research on verbs of striking (Riemer, 2005; Viberg, 2016; Radden, 2022).

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Unraveling morphological competition: derivational properties of loan markers

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Keywords: morphological competition, Russian, loan words, corpus analysis, allomorphs

Morphological competition in Slavic languages has gained attention in a number of recent cognitive linguistic studies: see Bermel & Knittl 2012, Lečić 2016 on allomorphy in nominal endings; Janda et al. 2013, Olsson 2021 on allomorphy and synonymy in verbal prefixes; Nesset & Janda 2010, Kuznetsova & Makarova 2012 on variation in Russian verbal suffixes *–a-/-aj-*, *–nu-/-anu-*. However, for the verbal domain, the main focus of such research is usually placed on prefixes rather than suffixes, without regard to loan stems. This brings forth several theoretical questions: are there suffixes that serve as loan verb markers in Slavic languages, what accounts for their distribution, and how are loan verbs with these suffixes integrated into the system of Slavic verbal word-formation?

In Russian, loan verbs can be introduced by a handful of suffixes: *-ova-*, *-eva-*, *-irova-*, *-stvova-* (which are often treated as allomorphs, Švedova et al. 1980); *-i-*; *-a-*; *-niča-*; *-e-*; *-nu-/-anu-*. We adopt a usage-based perspective (Kemmer & Barlow 1999) and, based on corpus data, approach these suffixes and the stems they combine with as derivational clusters. We collect the data from two resources: a database of 6,241 verbs that have an ipm > 4 in Lyashevskaya & Sharov (2009: http://dict.ruslang.ru/freq.php, based on the frequencies from the Russian National Corpus), and all corresponding verbs from the Russian web corpus RuTenTen11 (2011, https://www.sketchengine.eu/rutenten-russian-corpus/).The first database allows us to investigate the patterns that are well-established in the language, whereas the web corpus provides a better insight into more recent productive patterns.

In the derivational cluster, we are interested in two properties of the suffix + stem combination: 1) how many times each derivative type is attested in the derivational cluster, as well as how many members the cluster contains; 2) how many derivational extensions can both Slavic and loan verbs with each suffix have (i.e., for each combination, what is the "longest" derivative attested in the database). Thus, for each suffix, we define what kind of clusters are typical, how sizable they are, and what kind of derivatives they include, and present a comparative analysis of clusters associated with different suffixes.

Our results show that Slavic and loan verbs often have different properties: e.g. prefix stacking is only attested in Slavic verbs. Different suffixes, even the ones that are considered to be allomorphs, behave differently both in terms of their frequency with loan stems and ability to have multiple derivational extensions. *-Irova-* is a purely loan verb marker with rare exceptions (*skladirovat'* 'put into storage; stock.IPF'); *-ova-* is widely used with both loan and Slavic stems and shows a more even distribution of different derivational patterns, whereas *-stvova-* is used only with Slavic stems. While *-nu-* is compatible with longer derivatives (*vyplesnut'-sja* < *vy- plesnut'* < *plesnut'* < *pleskat'* 'splash'), *-anu-* tends to be the end of the derivational path (*rez-anu-t'* < *rezat'* 'cut') and can be regarded a separate suffix. The corpus data allow us to establish derivational properties of loan markers and investigate how loan elements contribute to morphological competition.

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COGNITIVE MECHANISM OF "ZOOMING IN" IN "ANTIVIRAL" PUBLIC SERVICE ADVERTISING: FROM THE "SPANISH FLU" TO "COVID-19"

Whereas most studies on the pandemic COVID-19 discourse focus on its lexical and word-building features, the cognitive research on this issue is still scares [Cummings 2021; Guido 2022]. The paper considers verbal and non-verbal means of the "zooming in" cognitive mechanism in the case of "antiviral" campaigns provided by public service advertising (hereafter – PSA). Building upon the conceptions of [Hill, MacLaury 1995: 280; Foulsham and Cohn, 2020], by the "zooming in" cognitive mechanism we mean a semantic shift aimed at switching between full and close-up scenes and bringing the object to the spotlight of attention.

The study analyzes three main groups of public service advertising texts that promote the fight against viruses throughout the twentieth – twenty-first centuries: 1) advertising of the 1910s – 20s about the prevention of the "Spanish flu" widespread in Europe, Russia, and the USA; 2) the "Avant-garde" hygiene propaganda in the USSR in the 1920s, created by Soviet Futurists and Constructivists, such as Vladimir Mayakovsky, Alexander Rodchenko, etc., and 3) contemporary PSA on "COVID-19" in English and Italian.

Zooming in, as one of the major cognitive mechanisms of "antiviral" PSA, encompasses the word-forming, lexical-semantic, as well as visual dimensions (pic. 1, 2).

Pic. 1. Soviet hygiene propaganda, 1920s

Pic. 2. We Are Social, Snapchat, 2020

For example, Soviet "Avant-garde" hygiene propaganda introduced linguistic innovations with word-formation means, creating augmentative forms, such as *bacillina* (rus.) *'a huge bacillus', gubishchi* (rus.) *'enormous lips'*. Contemporary anti-COVID campaigns employ enantiosemy, or auto-antonyms, as in the case of construction *go viral* with its two overlapping meanings: 1) 'to spread quickly and widely on the Internet like a virus' and 2) 'to spread information on the fight against the virus with lightning speed': *Let sharing.* ***Go Viral****. Share food. Share supplies* (#GoViralToStopTheVirus).

The analysis specifically addresses the case of the word *distance* which acquires contextual shifts of meaning: it no longer marks an objective spatial value, but a subjective variable switched to the zone of internalization, the internal space of a person: *Se ti vuoi bene, mantieni* ***la distanza****. Un metro puo bastare; E'* ***la distanza*** *a fare la differenza. Facciamolo per noi. Facciamolo per*

tutti. (#restiamoadistanza di almeno un metro); *Keep smart **distance***; *Care starts on the **front lines**. But it doesn't end here. Every act of care matters. Share your small acts of care. And inspire others to do the same* (NIVEA Share the Care). Contemporary PSA brings into focus various semantic components: evaluative (*smart distance*), metaphorical (*Distance breaks the chain*), etc. The idea that external distance means internal unity with a distant object leads to enantiosemy: *Se ti vuoi bene, mantieni la distanza* (Italy); *Zoom. Shorten the distance*.

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The Lexicon-Grammar Continuum: What Persian Complex Predicates Reveal

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Keywords: complex predicates, separability, frequency, compositionality, Construction Grammar, Persian, radial category

Contrary to the modular view of language, cognitive linguistics posits a lexicon-grammar continuum with gradient boundaries between the traditional modules of language (Langacker, 2008) where it is not always possible to ascribe given linguistic units to only one single language subsystem such as morphology versus syntax or semantics versus pragmatics.

In this study, we present empirical support for the lexicon-grammar continuum by looking into the separability of Persian complex predicates that, following the modular view, are thought to be either separable or inseparable. Such constructions are formed by joining a nonverbal element (NVE) to a simple verb that may have lost parts or most of its prototype meaning. The verb may be separated from the NVE by various words (example 1). In doing so, we focus on complex predicates consisting of nouns joined with *zadan* 'to hit', the second most often used simple verb in Persian, as the verbal element (example 2).

We argue that separability is best described as a scalar rather than an all-or-nothing phenomenon. Our analysis of corpus data within the framework of Construction Grammar yields a semantic description of *zadan* complex predicates as a radial category along with the frequency of separated complex predicates. It has been argued that the more *zadan* is removed from its concrete prototype meaning, the less the resulting complex predicates are open to separation. Compositional complex predicates are also more commonly used in separated configurations (example 3).

As far as frequency is concerned, only a weak negative correlation was found between token frequency and separability. Comparison of the complex predicates at the two extremes of the frequency continuum shows a stronger negative relationship between token frequency and separability (Table 1), supporting the idea that the internal structure of complex predicates of very high frequency becomes less accessible to syntactic modification through the process of chunking in which linguistic units develop stronger bonds through repetition (Bybee, 2010: 36; Dąbrowska, 2004: 223). Our results also suggest that separability is best described in terms of families of constructions that are semantically related to the core meaning of the simple verb, since complex predicates with similar meanings show different behaviors regarding separability.

An additional observation is that even those complex predicates that most resist separation may also be found in separated configurations, which makes it relatively unreasonable to label these constructions as either separable or inseparable. We view these constructions as existing along a continuum from less separable to more separable. Our view is consistent with the lexicon-grammar continuum as well as other gradient linguistic phenomena.

1. (a) *ali* *bā* *dust-ash* ***harf*** ***mi-zad*** **(not separated)**
Ali with friend-3SG.POSS speech IPFV-hit[3SG.PST]
'Ali was talking to his friend.'

(b) *ali* ***harf****-e* *khubi* *be* *dust-ash* ***zad*** **(separated)**
Ali speech-EZ good to friend-3SG.POSS hit[3SG.PST]
'Ali said something good to his friend.'

2. *harf* [speech] *zadan* 'to talk, say'; *hads* [guess] *zadan* 'to guess'; *ghadam* [step] *zadan* 'to stroll'

3. *sili* [slap] *zadan* 'to slap' vs *chāne* [chin] *zadan* 'to haggle': 45 vs 0 separated cases in a 100-sample size

	Token frequency	Total separations in the samples	Total attested tokens	Percentage of separation
lower 20 percent	100-225	432	4586	9.4
upper 20 percent	1000 and above	159	78184	0.2

Table 1. Lower token frequency shows higher rates of separation.

Abbreviations

SG: singular POSS: possessive IPFV: imperfective EZ: Ezafe marker (connecting the head nouns to its modifiers) PST: past tense

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Definiteness and verb meaning: Investigating the definiteness profile of English verbs

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Keywords: Definiteness, argument structure, verb semantics, usage-based cognitive construction grammar

In English verbs are taken to determine argument structure (Tesnière 1959; Fillmore 1968; Levin 1993, Levin & Rappaport 2005; Perek 2015). At the same time, English marks (in)definiteness overtly and obligatorily by determinatives like (*the*, *a*,…). Definiteness marking is seen as a discourse-pragmatic feature which codes identifiability, familiarity, specificity, etc. (Hawkins 1978; Langacker 1991; Lyons 1999; Sommerer 2018). Argument realization and definiteness marking are typically seen as separate grammatical phenomena. This paper suggests that the two phenomena are not as separate as it may be assumed (also see Dowty 1991; Filip 1999; Zimmerman 2001; Moltmann 2008). On the basis of a large corpus study of 3.4 million direct object NPs extracted from the British National Corpus (XML Edition) by means of a dependency parser (Chen & Manning 2014), we find verbs to vary widely in terms of the definiteness of their direct object. Among other things, this variation can be related to the meaning of the verb. For each verb we calculated its so-called 'Definiteness Ratio', i.e. the proportion of its definite uses. Using a Distributional Semantic Model we then show that specific verb groups tend to occur to a similar extent with (in)definite direct objects; for example, 'creation' verbs (*produce*, *develop*,…) and 'desire' verbs (*need*, *want*…) are much more likely to combine with an indefinite NP due to the fact that one produces or needs something that one does not yet possess and hence is most likely unfamiliar with. In contrast, 'knowledge' and 'movement' verbs (*explain*, *remember*, *shake*, *lift*…) are highly likely to collocate with a definite NP because one primarily explains what one already knows and what is familiar and specific. Our data show that next to intertextual discourse reasons, the semantics of a particular verb seems to have an influence on the definiteness profile of the arguments it licenses. This suggests that, from a usage-based, cognitive point of view (e.g. Goldberg 2006, 2019; Bybee 2010; Diessel 2019), verbs project not only information about the morphosyntactic encoding of their arguments, but also expectations about their discourse status.

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Comparing word meanings for their sensory underpinnings in early-blind and sighted people

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Keywords: Blindness, Word meaning, Sensory norms

While we experience the world through multiple sensory modalities, the visual modality often dominates. The primacy of vision is also seen in words' semantic representations, with participants generally rating word meanings as being most strongly associated with the visual modality, even for concepts strongly associated with other senses, such as instruments and food. Visual dominance in the semantic representation of words could reflect first-hand sensory experience—we experience the world predominantly through vision. On the other hand, information about vision can also be extracted from language (e.g., in conversation, reading, listening to the radio; Lewis & Lupyan, 2019). In order to disentangle the direct role of perceptual experience and the role of language in word meanings, we investigated the sensory associations underlying word meanings in a group of individuals who lack visual experience, i.e., early-blind individuals, as well as sighted individuals. If lack of visual experience affects semantic representations, we may see compensation from other sensory modalities. We asked 17 early-blind and 17 matched sighted Dutch native speakers to rate 100 Dutch nouns on their perceptual associations across six senses (vision, audition, haptics, gustation, olfaction and interoception) on a 0 (not at all) to 5 (very much) scale, following the procedure of Lynott et al. (2020). To cover a range of concepts, there were five semantic categories (20 words per category) thought to be strongly associated with different sensory modalities: animals (vision), instruments (audition), tactile objects (haptics), food (gustation), odor objects (olfaction). Using linear mixed effects models with participants and items modelled as random effects, we found a significant interaction between participant group and sensory modality. Follow-up contrasts with Bonferroni correction indicated a significant effect for ratings of the haptic modality only, such that early-blind participants rated words as more strongly associated with haptics than sighted participants. In exploratory analyses we separately examined each semantic category and observed the same pattern across all categories, except for animals: i.e., higher haptic ratings from the early-blind participants than sighted participants. In addition, early blind participants rated instruments as more associated with interoception than sighted participants. Our results support a role for both sensory and language experience in words' conceptual representations. Since early-blind participants did not differ from sighted participants in their ratings of words' visual associations, this suggests information about vision can be learned indirectly from other input, such as language. However, early-blind participants did provide stronger ratings of haptic associations, implying a form of perceptual compensation in semantic representations. This pattern of results supports hybrid models of semantics that suggest both perceptual and linguistic information is critical in word meaning (e.g., Connell, 2019; Louwerse, 2011).

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CONTACT-SPECIFICATION CONSTRUCTIONS in English and German.

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Keywords: Construction, Contrastive Construction Grammar, Diachronic Construction Grammar

This paper is concerned with sentences such as those under (1):

(1) a. She kissed him on the cheek. COCA-2018-FIC
b. She shot up from her chair and struck him in the face. COCA-1993-FIC

Firstly, we will present arguments for treating such sentences as representing a construction in its own right in English and describe its formal and semantic properties. Although formally sentences such as (1) – subject-NP V object-NP PP – correspond to the English CAUSED-MOTION CONSTRUCTION (e.g. Goldberg 2006), semantically it does not since the object-NP is not a THEME that is being moved to a GOAL indicated by the PP. Rather, the object-NP is the GOAL of the action expressed by the verb, and the PP a specification of this GOAL, which is why we will refer to the construction as the English CONTACT-SPECIFICATION CONSTRUCTION.

Having established the construction status of such sequences, we will carry out a cross-linguistic comparison between English and German, where there seem to be two corresponding constructions: one with an accusative, and one with a dative object:

(2) a. Sie küsste ihn [acc] auf die Wange … DWDS-2013-ZEIT
b. Sie schlugen ihm [dat] ins Gesicht. DWDS-1999-ZEIT

This will involve discussing possible differences in semantic function between the two cases, arguing that the dative lends itself to a BENEFICIARY-interpretation absent from the pattern with an accusative object. An important element of the comparison between the two cases will be establishing the collo-profiles of the verbs occurring in the two patterns.

Since, in the terminology of structuralist contrastive analysis (Burgschmidt & Götz 1974), one could describe the relationship between the two German constructions and the English construction as one of convergence, we will finally attempt to open up a diachronic perspective and show that one can also make out a case for claiming that constructions with a dative-object and an accusative-object existed in earlier stages of the English language:

(3) a. þa het Quintianus hi [acc] mid handum slean gelome on þæt hleor … YCOE-996-coaelive.o3
'then ordered Quintianus to strike her with the hands repeatedly on her face.
b. ond sette his þa swiðran hond him [dat] on þæt heafod. YCOE-731-cobede.o2
'and laid his right hand on his head'

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Generalization and Transfer in L2 Acquisition: The Role of Entrenchment in L1 and L2

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Keywords: Construction Grammar, L2 Learning, Transfer, Entrenchment, Generalization

The interlanguage of L2 learners is shaped by various factors, perhaps most prominently transfer from L1 to L2 and (over-)generalization from L2. Transfer has traditionally been treated as an all-or-nothing phenomenon by focusing on L2 structures that either have or do not have an equivalent in the L1. Only recently, researchers working in usage-based construction grammar have taken into account frequencies and association strengths of L2 structures (e.g. Cabrera and Zubizarreta 2005, Ellis and Ferreira-Junior 2009, Martinez-Garcia and Wulff 2012, Römer, Brook O'Donnell and Ellis 2014). These studies show that entrenchment plays a similar role in L2 learning as it does in L1 acquisition.

What is missing is a systematic investigation of the role of the entrenchment of L1 structures and its interaction with the L2 entrenchment. We report three studies that investigate these factors using the case of the ditransitive construction in the interlanguage of German learners of English as a Foreign Language. The construction exists both languages but has a broader meaning in German (where it can encode almost any type of three-participant event) than in English (where it is restricted to transfer events). This semantic difference leads to differences in the collostructional preferences (Gries and Stefanowitsch 2003, Stefanowitsch 2006) of the construction in the two languages, allowing us to investigate the extent to which the transfer of L1 usage patterns to the L2 depends on the positive or negative entrenchment of verb-construction associations in the L1, and the extent to which transfer can be inhibited by the entrenchment of verb-construction associations in the L2.

The first two studies are rating tasks in which German learners of English are asked to rate the acceptability of English ditransitive sentences constructed according to either German or English collostructional preferences. In the first study, subjects were confronted with ditransitive constructions exclusively, in the second study, they were first asked to rate the corresponding to-dative (which, due to its broader meaning in English allows all verbs found in the German ditransitive). This was meant to remind them implicitly of the fact that the English ditransitive has a narrower meaning than the German one. The results of both studies show that L1 entrenchment is an important factor prompting learners to transfer L1 structures to the L2 and keeping them from acquiring the appropriate L2 constraints even if the latter are highly entrenched; L2 entrenchment plays a role in shaping learner's linguistic behavior only where there are no L1 associations interfering. In the third study, learners were asked to translate German ditransitives into English. The results show that learners translate these sentences according to German collostructional preferences, confirming the strong influence of L1 entrenchment.

Generally, our results confirm the role of positive and negative entrenchment in shaping the acquisition of lexical restrictions on particular slots in constructions. Specifically, they also show the stability of such entrenchment-based restrictions: once they have been acquired in a first language, they will be transferred to subsequently learned languages.

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Degrees of constituency in English complex prepositions

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Keywords: Construction Grammar, Complex Prepositions, Constituency

There is general agreement that there are linguistic structures that could be called "complex prepositions" – examples are *in spite of*, *in contrast to* or *with regard to* (see, for example, Hoffmann 2005).

However, there is less agreement as to how such structures should be analyzed. Some authors treat them as synchronically unanalyzable wholes (e.g. Quirk et al. 1985), some treat them as having internal but non-canonical structure (e.g. Huddleston and Pullum 2002), and some treat them as having canonical syntactic structure, arguing that they should not be regarded as linguistic units in their own right at all (Seppänen et al. 1994). All authors provide good arguments for their position.

On closer inspection, this is at least partly due to the fact that they consider different instances to be typical of the category. Some instances, like *in spite of*, are fully fixed expressions, with no lexical variation at any position and no possibility to modify any of the words they consist of (cf. **with spite to*, **in cruel spite of*), suggesting that they should be treated as internally unstructured units. Other instances, like *in contrast to*, allow variation at some positions (*by contrast to*, *in contrast with*) and modification (*in sharp/stark contrast to*), suggesting that they are best treated as having canonical syntactic structure.

In previous work, the existence of a "complex preposition construction" has been suggested (Stefanowitsch et al. 2020, Stefanowitsch 2022). In the present paper, I will build on this suggestion to show, first, that an analysis of complex prepositions in terms of a construction can account for the fact that some sequences of the type [Preposition-Noun-Preposition] behave like fixed expressions without internal structure while others behave like canonical prepositional phrases whose noun phrase contains another prepositional phrase. Put briefly, the former are fully lexicalized instances of the complex preposition construction, the latter are non-lexicalized instances (and in some cases not instances of the construction at all). Second, I will show that many instances of the construction fall in-between the two extremes outlined above, allowing some variation and/or some modification under specific circumstances. This implies of degrees of constituent-hood within the complex preposition construction and suggests that construction grammar needs to treat constituency within a construction as a continuum, such that instances of a construction can vary in the extent to which they inherit the constituency structure specified by the construction.

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Modeling landscape concepts using sensorimotor and emotional norms

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Keywords: conceptualisation, landscape, psycholinguistics, sensorimotor and emotional norm ratings, ethnophysiography

Although cognitive linguists have focused extensively on spatial language and cognition (e.g. Lakoff, 1987; Levinson, 2003; Talmy, 2000), there has been relatively little work on conceptualisations of landscape. However, people's interactions with landscape elements such as forests are essential to human life and how landscape elements are conceptualised in different communities is an emerging research area (see e.g. Burenhult et al., 2017; Burenhult & Levinson, 2008). Investigating conceptualisations of landscape is of applied relevance, too. International policy schemes such as the EU landscape convention and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services aim at describing and understanding culturally dependent conceptualisations of landscape (Council of Europe 2000; IPBES 2022). Cognitive linguistics has a critical role to play in this endeavour: It is unknown whether landscape concepts are largely shared across communities or whether they are largely a matter of linguistic convention.

We assessed landscape concepts in the Indo-European languages English, French and German with a participatory research design using online surveys. Since the conceptual system is grounded in perceptual, motor, and affective systems (e.g. Barsalou, 1999; Connell, 2019), we asked participants to rate landscape terms for their sensorimotor (Lynott et al. 2020) and emotional (Warriner, Kuperman & Brysbaert 2013) associations. We hypothesized that even for these three closely related languages, participants would differ in their conceptualisations of landscape.

As stimuli for the surveys we selected the most frequently mentioned landscape terms from a free-listing task by Van Putten et al. (2020). 279 Participants rated 74 landscape terms such as *mountain* in their first language, using scales ranging from 0 (not at all) to 5 (greatly). For sensory associations, people were asked: "to what extent do you experience MOUNTAIN by feeling through touch/ by tasting/ by smelling/ by sensations inside your body/ by hearing/ by seeing?" For motor action, we asked to what extent they experienced the term with the foot/leg, hand/arm, head, mouth, and torso. For emotions, participants used three scales from 0 to 5 which represented the dimensions calm to exciting, unhappy to happy and in control to controlled.

Using non-parametrical manova, we found cross-linguistic differences in ratings for 51 out of 74 analysed landscape concepts which confirms that English, French and German speakers conceptualise landscape differently. To further analyse the conceptual structure, we calculated cosine distance values between the ratings of landscape concepts in each language for sensorimotor and emotional rating domains. The results indicate that participants in all speaker communities distinguished the concepts based on similar criteria. Their ratings seem to differ between tranquil, engaging and potentially dangerous concepts for the emotional domain and between abstract and tangible, experienceable concepts. In a second study participants will be asked to rate landscape images instead to compare conceptualisations of linguistic and non-linguistic stimuli.

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The problem of productivity. Recent issues, challenges and approaches in the field of CxG

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Keywords: productivity, construction grammar, constructicography, construction types, slot analysis, frequency groups

The focus of this talk is on the empirical investigation of productivity differences of constructions, more precisely on the applicability of productivity measures across construction types and their concrete constructicographic application. In a general way, productivity can be understood as "the ease with which a linguistic process gives rise to new forms" (O'Donnell 2015: 3). Although gradation expressions like 'not productive', 'semi-productive' and 'highly productive' have been established within quantitative linguistic research, one can nevertheless observe wide discrepancies in the definition, the denomination and the theoretical treatment of this phenomenon. But above all, problems remain regarding an adequate and transparent recording of productivity in an empirical sense. If productivity is understood as a quantitative phenomenon, this implies, on the one hand, that productivity can be measured and empirically determined, and on the other hand that the productivity of different patterns can be compared on the basis of these measurable values (cf. Bauer et al. 2019: 45; Gaeta & Ricca 2015: 848). The main debate in productivity research over the last three decades has therefore revolved around the question of how to adequately measure and operationalize productivity on the basis of certain frequency values that can be determined on the basis of large text corpora (see Barðdal 2008: 25; Booij 2007: 69).

In this context, it is by no means trivial that the concept of productivity and corresponding measured values usually come from the field of morphology, where they have a long tradition, particularly in derivation research (cf. Plag 2006; Bauer 2011). One of the main tasks of today's productivity research is to find a way to adapt these productivity measures to the concerns of non-derivational, e.g. compositional (cf. Hein & Brunner 2020), inflectional (cf. Koefoed & van Marle 2000; Haspelmath 2002; Dressler 2003), syntactic (see e.g. Zeldes 2012; Geata & Ricca 2015; Perek 2016), but also phraseological productivity processes (cf. Itoh 1991; Stumpf 2016). For Construction Grammar, which is characterized by the idea to describe the language as a large variety of more or less productive constructions that extend to different linguistic levels, this question is of particular importance: In addition to the effort to explain productivity differences in terms of restrictions, the main issues addressed in this field are how one can a) capture, b) compare and c) map such differences with respect to different constructions as well as construction types.

This talk attempts to develop initial answers to these questions. More precisely, empirical case analyses based on data from the *German Reference Corpus* (DeReKo) are used to illustratively examine two different types of constructions, namely superlatives as grammatical constructions, cf. (1)–(2), and [*Einmal* X, *immer* X] 'Once X, always X' as well as [*Ich* X*, also bin ich*] 'I X, therefore I am' as so-called 'phraseo-templates' (Fleischer 1997), cf. (3)–(4), to discuss the benefits and limitations of different common productivity values. Subsequently, it is shown how productivity differences can be made more transparent and comparable with the help of so-called 'frequency groupings' carried out by the corpus-linguistic tool *Lexpan* (Steyer & Brunner 2014). Finally, the talk concludes by outlining how such findings could be taken into account in the lexicographic endeavor of documenting constructions in large repositories of form-meaning-pairs ("constructicography", see Lyngfelt et al. 2018). More specifically, we discuss how productivity information can be implemented within the technical infrastructure of the *German FrameNet Constructicon* (*FrameNet-Konstruktikon des Deutschen*), and how it can be used for modelling productivity differences between constructions.

(1) Doch die Rolle des Führungsspielers ist ihm nicht auf den Leib geschneidert. Im Kollektiv fühlt er sich **am wohlsten**. (BRZ, 11.09.2008)
*But the role of the leader is not tailor-made for him. He feels **most comfortable** in the collective.*

(2) „Silver Lining" ist seit Langem **das schönste Plädoyer** für die alltägliche Verrücktheit. (BRZ, 03.01.2013)
*"Silver Lining" is **the most beautiful plea** for everyday weirdness for a long time.*

(3) Fürs Leben gilt: **einmal Borusse immer Borusse**. Unabhängig vom Tabellenstand. (MM, 19.03.2014)

*For life, the following applies: **once a Borusse, always a Borusse**. Regardless of the position in the league.*

(4) «**Ich provoziere, also bin ich**.» In der Pubertät reizt das Dunkle, das Derbe stärker als in jeder anderen Lebensphase. (ZTA, 07.04.2006)

*«**I provoke, therefore I am**.» In adolescence, the dark and the crude are more appealing than in any other phase of life.*

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What Factors Influence Conceptual Salience Assigned to Nominals of Sentences? Evidence from Eye Fixation on Visual Images

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Keywords: salience, trajector/landmark, eye-tracking, visual world paradigm

This experimental study examines the factors that impact the extent of salience given to referents of nominal phrases (NPs) in a sentence. It specifically investigates the effects of syntactic (grammatical statuses and word orders), semantic (thematic roles and animacy), and pragmatic (topicality) facets of language on the salience of NPs. Cognitive linguistics, especially Cognitive Grammar, uses the concept of salience (i.e., focal prominence) to explain a broad range of linguistic phenomena semantically and conceptually (Talmy, 2003; Langacker, 2008). A theoretical framework that takes a visual stance in analyzing language uses the following concepts of vision: *figure/ground, the onstage model, profile/base, trajector/landmark*, and *grounding*. According to Langacker (1987), phrasal or sentential subjects obtain the status of trajector (i.e., the most prominent thing) and objects acquire that of landmark (i.e., the second prominent thing). As such, he directly connects conceptual prominence and grammatical statuses; however, the salience of NPs could be complicatedly associated with several other factor as well. Thus, even a sentence object (or an accusative nominal) may be the most prominent among all participants in some situations.

To prove this assumption, we conducted an eye-tracking experiment (n = 22) adopting the visual world paradigm in a broad sense (Tanenhaus et al., 1995). The experiment provided sentences and visual images equivalent to the meanings of those sentences while recording how participants viewed such drawings, especially the areas they gazed at in a picture. To compare the effects, each image was presented with multiple kinds of sentences, modifying NPs' grammatical cases (e.g., nominative and accusative cases), word order (e.g., the first and the second NPs), thematic roles (e.g., agent and patient), animacy, and topicality. Analyzing the influence of these items on participants' eye fixations showed that, as a whole, two syntactic factors—both grammatical statuses and word order—were less responsible for the prominence of NPs than semantic and pragmatic factors. A multi-regression analysis revealed that contextual focus and theta roles were, respectively, the largest and the second-largest factors that affected participants' fixation durations on distinct areas of images. Although some results were incoherent or did not show statistically significant differences, the experiment exhibited a certain level of the tendency mentioned above.

In conclusion, our visual-world eye-tracking study was constructed based on a theory stressing the language-vision relationship and explaining language in terms of vision. However, the results suggested that grammatical statuses (the subject or the object of a sentence) had little contribution to how participants focus on NP referents in a sentence. This means that, to comprehend prominence broadly and realistically, it is necessary to consider that a variety of factors not only from the view of syntax but also in light of semantics and pragmatics, have a considerable effect on the extent of salience of NPs in a complex way.

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Divergent pathways between motivational source and target: the 'neither X nor Y construction' in English and Croatian.

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Keywords: spatial relations, intermediaries, antonymy, motivation, metaphorization

Spatial relations cannot be conceptualized without spatial opposites, often organized around the three main spatial planes *up-down*, *left-right*, *forward-backward*/*front-back*. The intermediary point between the two (e.g., neither *up* nor *down*) has psychological reality both perceptually (Bianchi et al. 2017) and conceptually (Tribushinina 2009). In English and Croatian, the intermediary point may be expressed through the antonymic construction neither X nor Y, where X and Y are syntagmatic positions filled by pairs of directional antonyms (Jones et al. 2012). Thus, neither *left* nor *right* (Cro. ni/niti *lijevo* ni/niti *desno*) may refer to an intermediary point between two directional antonyms, either physically (e.g., referring to straight movement) or metaphorically (e.g., referring to a centrist political position). However, there are also examples without directional antonyms, e.g., neither *here* nor *anywhere* (Cro. ni/niti *ovdje* ni/niti *nigdje*) 'nowhere' (physically and metaphorically), where the intermediary point is excluded. In this paper we explore the conceptual motivation (Panther & Radden 2011) behind the neither X nor Y construction in Croatian and English, specifically the role that antonymy, the intermediary point and metaphorization play in it.

To do that, we conducted a contrastive study of the two constructions in the English enTenTen20 corpus and the Croatian hrWaC corpus, and a native speaker rating study. The corpus study (a random sample of 500 examples for each language coded on dimensions including meaning, part of speech, metaphoricity, evaluation, and several others) showed that the intermediary point sense prevails in English and is primarily used with directional antonyms. In contrast, the non-intermediary sense prevails in Croatian. In both languages, the construction paired with directional antonyms frequently carries metaphorical meaning. We also conducted a native speaker study with speakers of English and Croatian (N = 100 each), where participants were asked to (1) rate the level of oppositeness between the X and Y term, (2) rate the metaphoricity of the construction, and (3) decide whether the construction features and intermediary point, both in isolation and in typical sentential contexts. Preliminary results suggest that speakers of English rate the construction as more "opposite" and less metaphorical than speakers of Croatian, suggesting its closer relation to the spatial source.

The differences between English and Croatian are a natural result of divergent constructional histories and paths. However, they also raise an issue with the spatial motivation of the neither X nor Y construction. To wit, whereas spatiality and the intermediary point seem to be clearly available in English, the Croatian construction seems to be further away from its spatial motivational source. Diachronically, even constructions with clear morphosemantic links to their motivational source need not feature source-domain meanings (Raffaelli & Kerovec 2008). This suggests that motivational paths for different languages – even in examples that may seem as transparent as the Croatian and English neither X nor Y construction – should not be conflated. In other words, it may be time that we explore (rather than idealize) the pathways from the (potentially universal) psychological mechanisms (e.g., the psychological reality of intermediary points) to their linguistic targets (and back), as is currently being done in metaphor studies (Piata & Soriano 2022).

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Assessing the role of lexical aspect in the acquisition of French Passé Composé and Imparfait: The case of Chinese-speaking learners of French

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Keywords: lexical aspect, acquisition of tenses, French L2, Chinese learners

The influence of lexical aspect in the acquisition of verb tenses has been widely studied. According to the Aspect Hypothesis (Andersen & Shirai 1994), learners are strongly influenced by lexical aspectual classes of predicates: perfective morphology is initially associated with telic predicates (achievements and accomplishments), in contrast to imperfective morphology related to atelic predicates (states and activities). Over the past three decades, the Aspect Hypothesis has generated numerous studies addressing the role of lexical aspect in the acquisition of tenses. However, less attention has been paid to tensed L2 learners with a tenseless L1 background.

Thus, this study aims to investigate the acquisition of French Passé Composé and Imparfait in Chinese learners, focusing on the following two research questions: Does the lexical aspect of predicates affect Chinese learners' use of Imparfait and Passé Composé? Does the influence of lexical aspect decrease as the proficiency in L2 improves?

We carried out an experimental study, in which 46 French-major Chinese students participated, including 13 sophomores (Level 1), 17 juniors (Level 2), and 16 seniors (Level 3). Following Izquierdo (2009), we divided the use of verb tenses into prototypical (i.e., Passé Composé with telic predicates or Imparfait with atelic predicates) and non-prototypical (i.e., Passé Composé with atelic predicates or Imparfait with telic predicates) contexts. Participants were asked to accomplish a task consisting of 16 questions containing 8 prototypical and 8 non-prototypical contexts.

Our quantitative analysis shows that there are more errors in non-prototypical contexts (45.4%) than in prototypical contexts (4.3%). In prototypical contexts, Chinese learners show a better grasp, which manifests in 94.6% of states, 90.2% of activities, 97.8% of accomplishments, and 100% of achievements. In non-prototypical contexts, the performance of learners is less satisfactory: 80.4% of accomplishments, 67.4% of activities, 37% of states, and 33.7% of achievements. In both contexts, chi-square tests performed for each aspectual class do not show significant differences across three proficiency levels.

To conclude, the results show that lexical aspect influences the use of French past tenses in Chinese learners: in prototypical contexts, states and activities were predominantly associated with Imparfait, while accomplishments and achievements were predominantly associated with Passé Composé; in non-prototypical contexts, the rates of errors increased dramatically. Surprisingly, contrary to previous studies investigating the acquisition of English past tenses in Chinese learners (Zeng et al. 2021), in both prototypical and non-prototypical contexts, the L2 proficiency level does not have a statistically significant effect on the use of French past tenses in Chinese adult learners.

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Visual and auditory lexical decision in German: An online megastudy

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Keywords: Visual lexical decision, Auditory lexical decision, German, Megastudy, Online experiment

In recent years, there has been a growing inclination towards the collection and examination of extensive quantities of behavioral data through an online platform. The implementation of online methods in psycholinguistic research offers several advantages (Aguasvivas et al, 2020), including the ability to reach a large and diverse sample of participants. By recruiting participants from a wide range of demographic backgrounds, online experiments can enhance the generalizability of the results and provide a more representative sample of the population.

The lexical decision task is a widely adopted methodology in the field of psycholinguistics, primarily used for investigating the cognitive processes involved in word recognition. While massive data sets of reaction times collected from lexical decision tasks are available in several languages (Keuleers et al, 2010, 2015; Brysbaert et al, 2016; Tucker et al, 2019), to the best of our knowledge, no large-scale lexical decision experiments in German have been conducted through crowdsourcing. In light of this, the use of online platforms for conducting large-scale lexical decision experiments in German could prove to be a valuable tool for advancing our understanding of the cognitive processes involved in word recognition in German.

In the current study, we present two online lexical decision experiments, one in the visual domain (Lexical Decision: LD) and the other in the auditory domain Auditory Lexical Decision: ALD). Both experiments include a total of 27,060 real words and 24,850 pseudo-words. The real words were obtained from the deCow corpus, a corpus of German texts compiled by Schäfer et al. (2014). Pseudo-words were generated using the Wuggy pseudo-word generator (Keuleers & Brysbaert, 2010) and further selection was done through custom code to closely mimic the phonotactic patterns of the German language. For the ALD, all real words and pseudo-words were recorded by a single speaker, who pronounced the pseudo-words as naturally as possible.

Although additional participants are needed for both experiments, sufficient data from the LD have been collected to perform an initial statistical analysis. Thus we present preliminary results of analyzing the LD reaction times using a linear regression model. At the time of writing this abstract, a total of 451,832 observations have been collected in the lexical decision (LD) experiment. For the purpose of the preliminary analysis, incorrect responses, reaction times that fall outside of a specified range (shorter than 300ms or longer than 2,000ms), and responses by non-native speakers were removed.

A linear regression model fit to the data, revealed that both frequency and word length play a significant role in reaction times, consistent with the findings of previous studies. Furthermore, we observed that reaction times were shorter on computers compared to smartphones. Additionally, the analysis indicated that female participants had faster reaction times than male participants, while the accuracy of males and females was similar. We intend to continue the collection of data in both the visual and auditory domain and publicly release the collected data.

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Making a cardinal point: The conceptualization of EAST and WEST in Hungarian politics

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Keywords: conceptual metonymy, political discourse, political-cultural context of metonymy

In political discourse, cardinal points are not mere reference points on a compass: based on the map ICM, they represent different political-cultural regions via the part for whole metonymy (Brdar-Szabó & Brdar 2011). For example, *the East* refers to countries which had communist governments prior to the 1990s within Europe. Moreover, pairs such as *the East* and *the West* hold "metonymic implications," i.e., they carry values based on cultural and political oppositions (Brdar-Szabó & Brdar 2011: 234). Thus, the question arises what implications concepts based on cardinal points can have in political communication.

To explore the values behind two cardinal points, the EAST and the WEST, this research presents a case study of these concepts in Hungarian political discourse. Hungarian politics frequently associates the WEST with "progress" and "democracy," and the EAST with "backwardness" and "oppression" (Rac 2014). However, the attitude to the EAST-WEST dichotomy was challenged by the current Hungarian government as it implemented its foreign strategy called "keleti nyitás" [eastern opening] in 2012. Thus, the tension between the two concepts in the country's political discourse makes it possible to shed light on opposing values associated with the EAST and WEST.

The concepts are analyzed in online news articles published by the most widely read Hungarian progovernment and non-progovernment websites, *origo.hu* and *24.hu* in 2022. Relying on a discourse-based approach to metonymy (Brdar 2015), I search for the keywords "kelet" [east] and "nyugat" [west] in the corpus and identify the target concepts they stand for based on the context and co-text in which they occur (Brdar-Szabó & Brdar 2011). By way of illustration, the WEST FOR THE EUROPEAN UNION metonymy can be found in an article discussing the EU measures against Russia: "hazudik a Nyugat a szankciókról" [the West is lying about the sanctions]. Subsequently, the hits are qualitatively interpreted, determining the way the observed concepts are depicted (Brdar 2015).

In sum, the study explores the way metonymy functions in specific cultural-political contexts via the conceptualization of the EAST and the WEST in Hungarian political communication.

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WOMAN IS SEXUAL OBJECT and MAN IS GENES. A cognitive analysis of incel discourse.

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Keywords: incel, ideology, frame semantics, metaphor, metonymy, gender, discourse practices

The link between involuntary celibates (incel) and terrorism has been discussed in the media as well as in academic work (Hoffman, Ware, & Shapiro, 2020; O'Malley, Holt, & Holt, 2020). Papadamou et al. (2021) found that any user on YouTube has a 6.3% chance of being suggested an incel-related video even when no such content is sought particularly by the user, which makes this subject alarming for online radicalization.

The present paper explores the dangers linked to the hate speech and violence openly discussed on such websites, which allow the development of a specific language and ideology among the users. A lot of the views expressed can be transcribed through frames (Fillmore, 1976) and metaphors (Lakoff and Johnson, 1980): women, as sexual objects, should be "distributed" among the men who have inferior genes because SEX (for men) IS A NECESSITY. The incel community also seems to prefer a metonymy-based practice that links both anti-feminist and racist views (for example, all women deserve revenge, the term "currycel" is used to talk about a person from South Asia, etc.).

The corpus used contains more than 1,500 posts drawn from an online forum and analyzed using AntConc for a view of the terms and frames used by the members. Their language promotes frames and prototypicality (Berlin & Kay, 1969; Rosch, 1977), with a preference for blends (e.g., terms such as incel from involuntary celibate, locationcel from location and incel, etc.), categorizing people as well as experiences in terms of stereotypes and the UP and DOWN metaphor (Lakoff and Johnson, 1980). Following these patterns, women are dehumanized, as they are only seen as sexual objects.

This topic is particularly important in relation to ideology, and the way power relations between men and women (dominance and subordination) should be kept and developed (Lazar, 2005; Fairclough and Wodak, 1997). The users consider that a woman can only be used for sex, and consent is not a factor that should be taken into account. Calls for violence against women are frequent and supported by most users on such forums. The users seem to adhere to faulty reasoning processes (if a, then b) and false biological views that they promote as "common sense."

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A semantic network analysis of the preposition by between space and time

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Keywords: polysemy, image schema, semantic network, preposition

Most previous studies regard prepositions as polysemous (e.g., Lakoff (1987), Tyler and Evans (2003), Lindstromberg (1998, 2010)). As for *by*, Hirasawa (2019) argues that English native speakers acquire semantic uses of *by* by considering elements it collocates with, denying Hanazaki's (2005) semantic network approach. However, there are at least some relations between spatial and temporal meanings of *by* because they have semantic similarities, so such an approach is justifiable.

Hanazaki and Kato (2004) and Hanazaki (2005) develop image schemas for each meaning of *by* through Tyler and Evans's (2003) approach, which involves the process of extracting distinct meanings of prepositions from the context. Their semantic network is established through predominance (i.e., frequency) and pragmatic strengthening. Spatial meanings of *by* are classified into the <Near/Out-of-the-domain> type, and its temporal meanings into the <Near/Out-of-the-domain> and <Till> types.

However, there are some problems with their analysis. First, they establish only one schema for spatial meanings of *by*, the <Near/Out-of-the-domain> schema. It does not describe some differences between *by* and *near*, as illustrated in (1), or cannot deal with spatial meanings of *by*, such as those in (2) and (3), which involve the notion of movement/transfer.

(1) a. There are a few benches near/by the river…
b. A robot submarine is developed near/*by the sea floor.
(Shimada (2013:28), with some modifications)

(2) A train bellowing by just over my head, a train that would probably be dropping some nice hot sparks into my hair and down back of my neck… (S. King, *The Body*, p. 79, underline is mine)

(3) My name is Joey Gladstone. I'll be by to pick the tickets up this afternoon.
(*Full House*, Season 5, Episode 6, cf. Hirasawa (2019:128-129), underline is mine)

Furthermore, the two temporal senses are not directly related to each other in Hanazaki's semantic network of *by*. The *by* illustrated in (4) is classified into <Near/Out-of-the-domain> as a metaphorical extension from space to time, while *by* in (5) is sorted into <Till>. However, the two meanings should be located closer to each other in the network, since they share some similarities.

(4) A week had gone by since she had first approached him.
(G. Orwell, 1984, p. 114, underline is mine)

(5) Your papers are to be handed in by next week. (Quirk et al. (1985:692), underline is mine)

This study concentrates on considering semantic relations between spatial and temporal meanings of *by* based on a more elaborate image-schema (semantic-network) approach (Lakoff (1987) and Dewell (1994)) than Hanazaki's, taking some ideas from Takahama et al. (to appear), which analyze spatial meanings of *by* with data including 1320 instances collected from seven novels. As for the spatial meaning, by incorporating notions such as "bounded area" and "horizontal proximity" into Hanazaki's schema, the <Vicinity in the horizontal plane> schema is constructed, which illustrates differences between *by* and *near* (lack of "bounded area"). Also, the schemas of <Going across> and <Dropping in> are established to describe "movement/transfer" situations like those in (2) and (3). As for the temporal meaning, the schemas of <Going across in time> and <Result stage continuing after reference point> are established to express situations like those in (4) and (5). Their difference comes from profile shift (Dewell (1994)). The former schema makes the property of [TR's horizontal movement] more prominent while the latter makes [TR's getting out of the bounded area] more prominent. The network of relevant meanings of *by* is given in Figure 1. <Vicinity in the horizontal plane> is identified as the central meaning through predominance and extends to <Going across> and <Dropping in> through inheritance of some semantic properties. The two temporal meanings of <Going across in time> and <Result stage continuing after reference point> derive from the spatial meaning of <Going across> through metaphorical extension.

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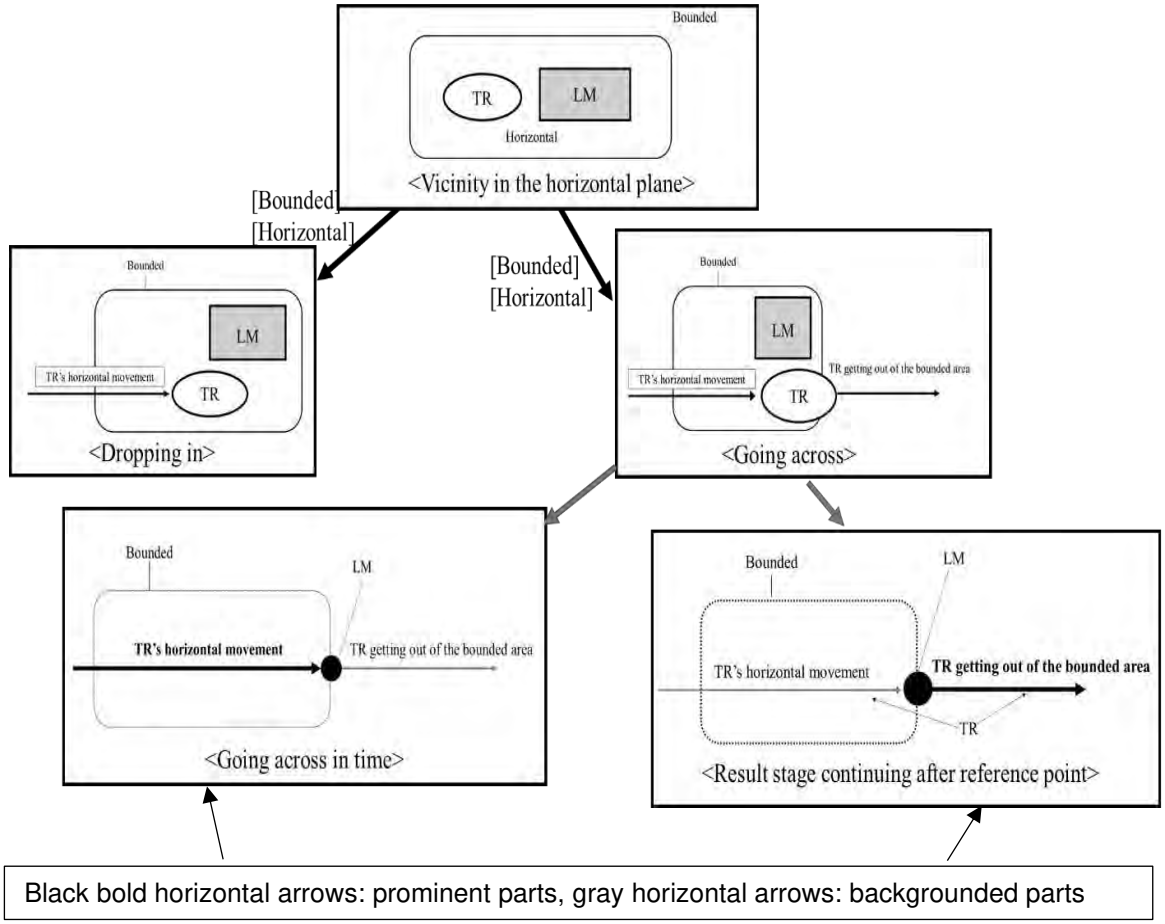

Fig **1:** A semantic network for the spatial and temporal meanings of the preposition *by*

(Black slanting arrows denote inheritance of semantic properties and gray slanting metaphorical extension.)

Statistical learning of tone is constrained by native language experience

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Keywords: Lexical tone, Non-native phonetic perception, Statistical learning, Categorical perception

Background: Different language users may weigh prosodic cues differently depending on which cues their native languages rely on the most (van der Bij et al., 2017). This native-language-dependent feature of phonological perception has been proven flexible in infants (Liu & Kager, 2017) and adaptive in adults (Ong et al., 2015). Given these previous studies, a question worth investigating is whether or not the adaptive non-native tone perception can be generalized to a statistical learning setting with highly variable speech stimuli. With this question, we can infer how abstract non-native tone perception could be.

Method: Two experiments were conducted to answer the above research question. In experiment 1, we created an artificial tonal language where 2 tone contours (i.e., a rising tone and a falling tone) were conditioned on 32 CVC frames. We had 24 non-tonal language speakers in the non-native group and 23 Mandarin Chinese speakers in the native group. Both groups were first familiarized with the artificial tonal language for 10 minutes, and then they were tested with speech stimuli that were either identical (legal items) or contrary (illegal items) to the tonal CVC frames they learned. Our hypotheses for experiment 1 were: (1) the native group would be more likely to accept the legal items in the first half of the test, and (2) the non-native group would show a preference for legal items in the second half of the test. To further demonstrate to what extent tone perception could be different between non-native and native tonal language speakers, we carried out experiment 2 to measure the sharpness of categorical perception of a rising versus a falling tone contrast. We fit the data with a logistic regression model and took the slope of the function as the dependent variable. There were 20 non-native tonal language speakers (Dutch speakers) and 18 native tonal language speakers (Mandarin speakers) who participated in experiment 2. We hypothesized that the native group would show a steeper slope of categorical boundary in tone perception compared to the non-native group.

Result: We split the test trials in experiment 1 into two halves and found that participants in the native group were more likely to accept legal items in the first half part (Fig. 1). Such difference was not shown in the non-native group. However, in the second half part, no difference was observed either between groups or between responses to stimuli. Experiment 2 discovered that non-native tonal language speakers perceive tones differently from tonal language speakers. More specifically, non-tonal language speakers had a shallower perceptual slope when perceiving a tone contrast (Fig. 2).

Conclusion: Distributional learning of tones in adults cannot be generalized to statistical learning that employed more variable stimuli. Our finding in experiment 1 implies that statistical learning of tone is constrained by native language experience in a top-down way. This conclusion is further supported by the results from experiment 2, demonstrating that there is a difference in categorical tone perception between non-native and native tonal language speakers.

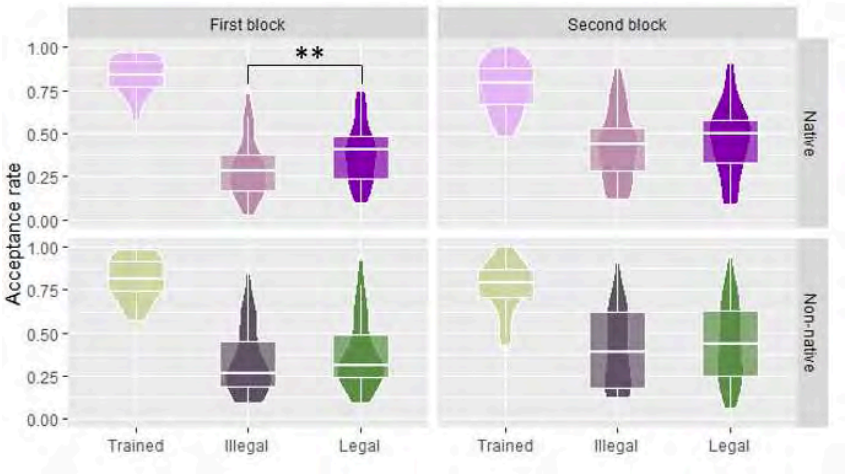

*Fig. 1: The acceptance rate for the three types of test items. Data are shown in four panels along the variables of block order (first block vs. second block) and groups (native vs. non-native). ** denotes $P < 0.01$.*

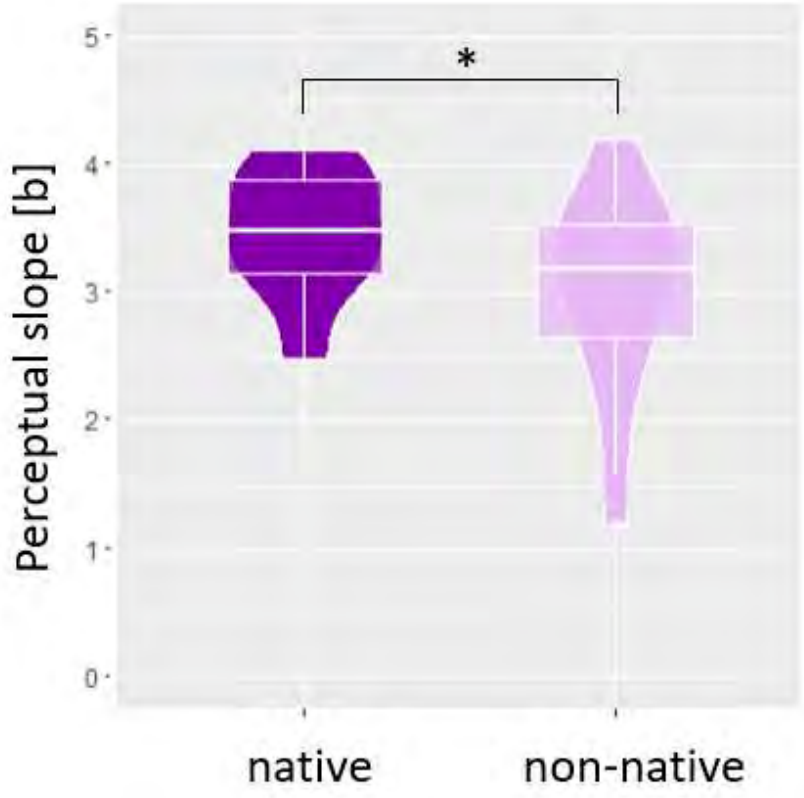

*Fig. 2: The between-group difference on the perceptual slope of identifying the rising vs. falling tone pair. * denotes $P < 0.05$.*

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"Not that, *that*": Coordinating joint attention through featural modulation in ASL demonstratives

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Keywords: demonstratives, joint attention, American Sign Language, non-manual markers

Demonstratives, deictic words such as this or that used for nominal reference, appear to be one of the only grammatical categories that are universal across languages (Diessel & Coventry, 2020), serving to coordinate interlocutors' joint attentional focus (Diessel, 2006), with some languages requiring different demonstrative forms depending on whether the referents are the focus of shared attention (Levinson, 2018). By contrast, when shared attention to the referent is not encoded by different demonstrative forms, Piwek et al. (2008) have shown that the proximal demonstrative can be used to draw attention to a referent through intense indicating, while the distal demonstrative is used in more neutral indicating contexts.

Most languages have two or more demonstratives used contrastively for proximal and distal spaces, but American Sign Language (ASL) seems to have a one-demonstrative system, using a form of index pointing for the majority of nominal demonstratives, with some features optionally (and not categorically) being modulated relative to proximity (Morford et al., 2019). Therefore, ASL cannot extend the proximal/distal contrast to intense vs. neutral indicating. How then do signers increase the deictic force of demonstratives to achieve joint attention during cases of intersubjective misalignment?

In the present study, we investigated whether non-manual markers and manual prosodic features produced with a demonstrative point can increase deictic force. Data from 10 adult ASL signers were collected using an interactive puzzle completion task. We coded 458 pointing gestures produced by participants in order to establish reference or redirect attention at a particular object. Of these 458 points, only 33 (7%) were modified with a preceding THAT sign, confirming claims that ASL has a one-demonstrative system. The experimenter elicited demonstratives by asking, for example, "Which piece has the green dinosaur's eye?" Following some responses, the experimenter intentionally chose an incorrect piece, prompting the participant to correct the experimenter and redirect focus towards the correct target. For each demonstrative, we coded the following non-manuals markers and manual prosodic features: (a) Eyebrow position; (b) Mouth shape; (c) Body lean; (d) Head tilt; (e) Facial scrunch (a composite of eyebrow lowering, eye squinting, nose wrinkle, head tilt; see Figure 1 below); (f) Tense hold; and (g) Repetition.

Somewhat contrary to our predictions, such features were not solely used to increase deictic force; rather, they were also used to increase the specificity of reference, and to negotiate joint attention. Participants modulated their use of these features based on their communicative goals. To increase specificity, as in trials with multiple possible targets, head tilt often accompanied the point, creating a visual cue that guided the interlocutor towards the intended piece. To achieve intense indicating, as was common following a misunderstanding where re-establishing joint attention was required, a constellation of features often appeared, including tense hold, scrunch, and forward body lean. To renegotiate intersubjectivity, inviting the experimenter to bring their attention back to a target piece, participants often signaled polite disagreement via a mouth morpheme such as clenched teeth or pursed lips, while maintaining a hold at the target piece, sometimes with a bounce. We interpret these results through an embodied phonology framework, highlighting the close relationship between motivated forms and their intended meanings (Occhino, 2017).

Fig. 1: Example of facial scrunch as used for intense indicating.

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Dynamic Resonance and Complex Imitation in Autistic Speech: Creativity Competing with Engagement in Chinese Children with ASD.

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Keywords: Resonance, Creativity, Ad hoc constructions, Chinese, ASD, Corpus-based

Resonance in interaction involves complex imitation (Arbib 2012), whereby speakers/writers re-using (parts of) the utterances of their interlocutors (Du Bois 2014). This leads to the formation of ad hoc constructions (Brône & Zima 2014) that result from an overt dialogic engagement with other people's speech. When resonance is creative, speakers/writers engage with others' language to express something new. Persistent creative resonance is a key indicator of interactional engagement and reciprocity at talk (Tantucci & Wang 2022b). Conversely, consistent absence of it underpins interactional detachment, which tends to be distinctive of ASD speech (Tantucci & Wang 2022a, 2022c). The present study addresses resonance in relation to creativity and provides a new applied model to measure intersubjective engagement in ASD vs neurotypical populations' speech. We retrieved 2000 utterances involving syntactical and/or lexical analogy from a preceding turn at talk from the corpora of neurotypical first language acquisition of Mandarin Chinese Zhou2, Zhou3 (Li & Zhou, 2004; Zhang & Jing, 2009) and the Shanghai corpus of children with ASD (cf. Zhou & Zhang, 2020). We fitted a multifactorial mixed effects linear regression combined with conditional inference tree modelling (e.g. Levshina 2021) to measure the degree to which children creatively resonated with one another. This involved modelling the frequency and the magnitude of new constructions of varying complexity that were based on what was previously said by their interlocutors. Our results indicate that in both neurotypical and ASD populations, dialogic resonance significantly correlates with engagement and creativity. However, our key finding was that creativity and intersubjective engagement (Tantucci 2021) are in competition in speech produced by children with ASD, while they are simultaneously at play in the neurotypical population. Additionally, there was also a significant tendency of children with ASD to resonate with their own speech rather than with the one of their interlocutors. This approach points to an applied implementation of Construction Grammar in naturalistic interaction. The present case-study provides large-scale evidence to suggest a relatively impeded ability in children with ASD to resonate creatively with their interlocutors during the here-and-now of a dialogic event.

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Baddie or *baddo*? The weight of *-ie* and *-o* affixes in creating connotations

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Keywords: suffix *-ie*, suffix *-o*, morphopragmatics, evaluative morphology

While there is a considerable body of research on the form and function of evaluative derivatives within the Descriptive Grammar approach, not much attention is given to these units in the interface of Cognitive Linguistics, Cognitive Morphology, Pragmatics and Sociolinguistics. The pragmatic effects such as irony, sarcasm or pejoration can be recognised in the meaning of diminutives (Dressler & Merlini Barbaresi 2015), but the relations between particular affix forms and nuances of created connotations and pragmatic meanings have scarcely been considered in the research to date.

The presented study is aimed at examining the suffixes *-ie* and *-o* and their contribution to the connotative meaning of diminutive formations. Even though *-ie* is generally acknowledged to convey positive attitudes, as in *hubbie* (< *husband*) and *doggie* (<*dog*), it is not uncommon for its function to be cognitively reanalysed to produce pejorative forms, as in *blackie* (< *black person*) and *pervie* (< *pervert*). It is commonly believed that the evaluative reading that a diminutive receives is largely dependent on the meaning of the derivational base and the context in which the item is used. Yet, examples where the derivational bases have positive connotations, like *conchie/concho* (< *conscientious objector*), and *poshy/posho* (< *upper-class* (i.e. "posh") *person*) indicate the recategorisation of the sense as pejoration, which can be attributed to the use of the affixes. It has also been suggested that pejoratives ending in *-o* convey more negative (or offensive) connotations than *-ie* items (Schneider, 2003, p. 111), which indicates that the role of the suffixes may have been underestimated.

Tarasova and Sánchez Fajardo (2021) show that morphological process of diminution may be viewed as an example of diagrammatic iconicity in language on the level of word-formation. The current research looks deeper into the issue to understand the degree of contribution of the two diminutive suffixes to the iconicity of the word-formation process and their weight in creating positive and/or negative connotations.

The study is based on the combination of quantitative and qualitative analyses of NZE native speakers' perceptions of the differences in the connotations of *-ie* derivatives (e.g. *smallie*) and corresponding *-o* derivatives (e.g. *smallo*) which are presented in and outside of contexts. To alleviate the effect of the semantics of the derivational base, the study uses nonce-words, i.e. words that are not registered in English (based on OED3).

The study uses multivariate quantitative analysis to identify the correlation between the form of a diminutive affix and the speaker perceptions of the emotional connotations of the derivatives. The qualitative analysis also aims to show the relation between morphological structure and semantic ambivalence in the expression of pejorative meaning and discuss the cognitive processes involved in meaning construal of evaluative derivatives in communication.

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Zooming into manner: the uneven structure of speed adverbs in Estonian

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Keywords: Manner adverbs, speed of motion, meaning intensification, asymmetry, Estonian

Introduction. Language is unevenly structured reflecting the cognitive biases of human beings in processing the world. Of the many asymmetries detected in language, the spatial asymmetry in motion events, the goal-over-source asymmetry, is well known (Ikegami, 1987; Kopecka & Vuillermet, 2021). Other possible asymmetries in motion events have received less attention and, thus, little is known about the (a)symmetries within the domain of manner across its diverse dimensions (Cardini, 2008; Stosic, 2019). To zoom into manner, speed as a core dimension of manner is analysed in this study with a specific focus on Estonian speed adverbs (i.e., adverbs which express how fast or slowly the event progresses). The study is based on research showing that the vocabulary of speed expressions in terms of adjectives and adverbs in different languages is larger and more diverse for fast motion than for slow motion (Dixon, 2004; Hallonsten Halling, 2018), suggesting the predominance of fastness.

Aim and hypotheses. The study aims to establish the size and internal structure of the inventory of speed adverbs in Estonian (a Finno-Ugric and satellite-framed language). We hypothesise that fast adverbs (adverbs expressing fast motion; e.g. *kiiresti* 'fast') are more numerous and frequent than slow adverbs (adverbs expressing slow motion; e.g. *aeglaselt* 'slowly'), and that simple adverbs (one-stem-adverbs, such as *kiiresti* 'fast') of fast motion are more prone to meaning intensification than slow adverbs. That is, compared to simple adverbs of slow motion, adverbs of fast motion should occur more frequently as complex adverbs in which the meaning of the main adverb is enforced by reduplication (e.g. *kiiresti-kiiresti* 'fast-fast') or prefixation (e.g. *superkiiresti* 'super fast').

Data and method. We first created a list of all possible speed adverbs in Estonian using the dictionary-lookup method. Then, all these adverbs (N = 248) were independently rated for their meaning (expressing speed-related information or not) by the research group members. 87 adverbs were unanimously rated as speed adverbs. Of these, 42 were simple adverbs and the rest were complex adverbs. Because the resulting list of speed adverbs was not comprehensive, additional corpus searches were performed in the Estonian National Corpus 2021 with all the adverbs to establish their possible prefixes, reduplications and compound forms. After complementing and cleaning the data, the list of adverbs contained 95 simple and 283 complex adverbs (compounds, reduplications and prefixed adverbs). A frequency analysis was conducted.

Results. Fast adverbs were more frequent and diverse than slow adverbs both across simple and complex adverbs. Of the 95 simple adverbs, 22 were slow (adverb's mean frequency per million 9.8; sd 20.3) and 73 were fast (mean frequency 7.0; sd 25.3). Regarding complex adverbs, 67 were slow (mean frequency 0.6; sd 2.8) and 216 fast adverbs (mean frequency 0.1; sd 0.2). 39 unique reduplications occurred, mainly expressing fast motion (N = 28). Prefixed adverbs (N = 170) yielded a total of 46 unique prefixes co-occurring with fast adverbs and 21 prefixes co-occurring with slow adverbs. As for meaning intensification, and compared to slow adverbs, fast adverbs were more likely to be prefixed and less likely to be reduplicated. Conversely, slow adverbs were more likely to be reduplicated and less likely to be prefixed.

Conclusion. The type and token frequency of fast adverbs is larger than that of slow adverbs, suggesting the predominance of fast motion in language. This is in accord with findings of psychology indicating the predominant processing of fast motion.

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Metaphorical and metonymic uses of ‘grammar’ in linguistic discourse.

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Keywords: grammar, Finnish language, linguistic discourse, metaphor, metonymy

‘Grammar’ is one of the key terms in the field of linguistics. However, despite its centrality – or perhaps because of it – the use of ‘grammar’ in linguistic discourse appears diverse (e.g., Lyons 1995). This study aims to highlight the diverse nature of ‘grammar’ by examining how the term is used figuratively in linguistic discourse. The study adopts the framework of conceptual metaphor theory (Lakoff & Johnson 1980) and contrasts its findings with the previous studies conducted on the metaphorical uses of ‘grammar’ in pedagogical (e.g., Saaristo 2015; Cushing 2019) and other discourses (e.g., Bogetić 2017).

The data for the study consisted of 146 peer-reviewed research articles published between 2010 and 2021 in the Finnish linguistic journal Virittäjä, which is an academic journal dedicated to Finnish and other Finno-Ugric languages and their pedagogy. Thus, the study presents a case study into the use of ‘grammar’ in the Finnish linguistic discourse.

The data analysis was conducted as follows. First, all instances of the Finnish term referring to ‘grammar’, *kielioppi*, were retrieved from the data. Then, the instances were studied with a qualitative method by analyzing whether the term ‘grammar’ was used figuratively. All instances containing figurative language were then analyzed further in order to uncover the source domain for the underlying metaphor or metonymy.

The study suggests that, when using the term ‘grammar’, linguists rely amply on metaphorical and metonymic language: the term ‘grammar’ appeared in the studied research articles 234 times, and out these instances, almost half were noted to contain figurative language. The most frequent type of figurative language was a metonymy TEXT FOR AUTHOR (e.g., ‘the grammar states that’). The metaphors used for ‘grammar’ in the data included GRAMMAR IS SPACE, GRAMMAR IS STRUCTURE, GRAMMAR IS PUTTY, GRAMMAR IS A COMPANION, GRAMMAR IS AN AUTHORITY and GRAMMAR IS A RESOURCE.

Despite the ample use of figurative language, the metaphors and metonymies present in the research articles were found to be quite uniform, that is, linguists tended to use similar metaphors and metonymies when talking about ‘grammar’. This finding was anticipated, as metaphors have been observed to be linguistic practices shared by groups of people (e.g., Cameron 2008).

When contrasting the linguistic discourse with the pedagogical, the study suggests that the linguists’ conceptualizations of grammar differ from language teacher’s conceptualizations in one significant way: according to Cushing (2019: 163-164), language teachers tend to conceptualize grammar as a negative entity, such as ‘rulebook’, while this type of conceptualization is quite rare within linguists, who tend conceptualize grammar in more neutral terms, such as ‘space’ or ‘structure’.

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Spatial Image Schemas and Viewpoints Interacting in the Computer Game Puzzles Manifold Garden and Hyperbolica

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Keywords: Image Schemas, Viewpoints, Computer Game Puzzles, Impossible Worlds

This paper investigates how embodied/ enacted image schemas and force dynamics seem to operate and interact in the computer games Manifold Garden (Chryr 2019) and Hyperbolica (Code Parade 2022). The main aim is to show how some of the most pervasive image and force schemata may serve as cognitive-semiotic tools to discern different kinds of dynamic orientation processes based on central problem-solving strategies (Thiering & Mittelberg 2022). The hypothesis is that in solving the puzzles and the mazes more specifically, the player not only manipulates the game environment to find their way through the labyrinth, but at the same time the environment, or, rather its affordances, manipulates the player's embodied image schemas and force dynamics. Both games are particularly well-suited for this purpose, as they offer a range of game- and design-specific affordances such as hallways, rooms, walls, but also different colors, riddles, bricks, arrows, straight lines, that is, different geometrical objects that anchor spatial reference coordinates. Arguably, the games are based on the impossible world in M.C. Escher's lithograph print 'Relativity'. Impossible worlds with upside-down staircases impose rather odd perspectives and viewpoints. In Manifold Garden, these worlds keep emerging and vanishing as the game proceeds, thus affecting and challenging the viewer's habits of perception and canonical knowledge of spaces and places. Whoever plays the game enters and actively interacts with this particular, constantly changing digital environment. From an *enactive embodied* perspective Noë (2004) argues that perception is not merely a matter of passively structuring incoming information. It rather relies on dynamic bodily activity, and thus also on embodied image schemas and force dynamics, as we argue.

In both games, we see at least three predominant image schemas that jointly structure the game, interacting, in different moments, with a range of other schemas. First, Manifold Garden prompts the CONTAINER schema; it thus evokes, by principle, spatial relationships and thus spatial-relations schemata such as IN-OUT or ABOVE-BELOW. Second, when playing the game, the ultimate objective is to find one's way through the labyrinth with its intricate sub-spaces and sub- pathways. That is, we can assume that the SOURCE-PATH-GOAL schema is constantly activated: the path is not pre-set or given, but actually emerges while the player moves through the virtual environment and influences the way in which the game proceeds through subsequent perception-in-action phases. Third, along the emerging PATH, the phased flow of motion, and thus the game's progression, comes about through instantiations of interacting FORCES.

In this paper, an analysis is presented showing that a) in both games a spatial architecture on its own is at work (Günzel 2019); b) they are vivid examples of how spatial image schemas interact in game environments; and c) these environments ask for continuously shifting combinations of image schemas, visual perception and force dynamics based on the game specific affordances.

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Chinese analytic causative constructions with *shi* (使), *ling* (令), *jiao1* (叫) and *jiao2* (教): Diachronic variation across seven centuries

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Keywords: Cognitive Sociolinguistics; analytic causative construction; construction alternation; diachronic variation; corpus-based study

In line with recent developments in Cognitive Sociolinguistics (c.f. Kristiansen & Dirven 2008; Geeraerts et al. 2010; Reif et al. 2013; Kristiansen et al. 2021), this study investigates the diachronic variation of Chinese analytic causative constructions by examining the language internal and external factors affecting the choice of the most frequently used causative markers *shi* (使), *ling* (令), *jiao1* (叫) and *jiao2* (教) from the 14th to the 20th century (e.g. (1)).

(1)

这	使/令/叫/教	我	想起	了	他。
Zhe	***shi/ling/jiao1/jiao2***	*wo*	*xiangqi*	*le*	*ta*
This	make	me	think of	PFV	him
CAUSER	CAUSATIVE MARKER	CAUSEE	EFFECTED PREDICATE		

'This made me think of him.'

Factors affecting the choice of causative markers have been extensively studied in various languages, such as Dutch (e.g. Levshina et al. 2013; Speelman & Geeraerts 2009), English (e.g. Gilquin 2010; Stefanowitsch 2001) and contemporary Chinese (e.g. Liesenfeld et al. 2022; Tian et al. 2022). Yet the choice of causative markers in historical Chinese has not been well studied. Methodologically speaking, previous research on causative constructions in historical Chinese largely involves introspection or small-scale corpus-illustrated description (e.g. Cao 2011; Xu 2003). Yet the empirical tradition of Cognitive Sociolinguistics necessitates a usage-based and quantitative approach.

For the current study, we rest on the Corpus of Historical Chinese (Zhan et al. 2009) and restrict ourselves to a subset of the corpus by selecting data from the 14th to the 20th century. All the observations with *shi*, *ling*, *jiao1* and *jiao2* are automatically retrieved from the subcorpus, and then they are manually checked to avoid spurious hits. The valid observations are annotated manually for nine variables (cf. Tian et al. 2022).

We first explored the data using hierarchical cluster analysis, Multidimensional Scaling analysis and Multiple Correspondence Analysis (zooming in on patterns all three methods agree upon), which identified the characterizing features of *shi*, *ling*, *jiao1* and *jiao2* and visualized the development path of these markers across seven centuries. Then we used (multinomial and binomial) logistic regression modelling to verify whether the results of the exploratory methods can be corroborated by confirmatory methods.

The analyses revealed the context features constraining the choice of *shi*, *ling*, *jiao1* and *jiao2*, among which the syntactic form of the causee, the semantic class of the effected predicate and the mood of the whole clause showed the largest influence. We also found that ling tends to be used in the [*ling* + *ren* + emotion] construction after the 17th century, which corroborates previous findings of ling in contemporary Chinese (Niu, 2007; Tian et al., 2022). Our analyses also revealed the usage similarity between *jiao1* and *jiao2*, which may have led to the decline of *jiao2* as a Causative Marker in contemporary Chinese.

The findings not only extend our knowledge on analytic causative constructions in historical Chinese, but also provide diachronic clues that account for synchronic variation. Methodologically, this study adopted a usage-based, quantitative approach and illustrated how language internal and external (e.g., time, genre) features can be examined in a systematic way under the framework of Cognitive Sociolinguistics.

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Perspective Taking in Signing about Space: Conflated Relative-Intrinsic Frame of Reference and Its Consequences for Conventionalization of Lexical Signs

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Keywords: Perspective taking, Spatial frames of reference, Sign languages, Spatial terms

Several sign languages employ a conflated relative-intrinsic frame of reference in their spatial descriptions: signers talk about space and spatial configurations of objects by employing classifier constructions that show the location and orientation of the objects relative to each other (the intrinsic frame) while simultaneously importing the egocentric perspective of the signer (the relative frame) (Emmorey, 2002; Perniss, 2007; Arik, 2008; Arik & Milković, 2007). Such conflation of frames has not been described for spoken languages, and may be a unique modality-specific feature of sign languages. Nevertheless, sign languages appear to conventionalize such conflated means differently from each other; specifically, they have different preferences for what perspective is adopted in spatial descriptions, and this conventionalized choice has consequences for how spatial relations are depicted. We explore whether this conventionalized intrinsic-relative frame may have consequences for how lexical signs are conventionalized. Specifically, we hypothesize that the preference for the conflated frame may lead to conventionalization of signs in the 2D plane (using relations between the signer's hands) rather than in the 3D plane (using relations between the signer's hands and the body). Using *the Spread the Sign* corpus, we coded seven unrelated sign languages for whether 74 concepts used for spatial descriptions employ the 2D plane or the 3D plane. We show that there is a tendency in all the languages to employ the 2D signs.

Methods: four sign languages that have been investigated for perspective taking in the past (American Sign Language (ASL), German Sign Language (DGS), Turkish Sign Language (TID) and Croatian Sign Language (HZJ)) and three additional genetically unrelated sign languages: British Sign Language (BSL), Japanese Sign Language (JSL) and Chinese Sign Language (CSL). The list of glosses generated for the pilot study was further refined: only glosses that most of the seven sign languages chosen had entries for were selected for this pilot study. In addition to coding signs as 2D or 3D, some signs were coded as "Other" if they did not meet the criteria for either 2D or 3D (arbitrary signs, fingerspelled signs, etc.).

Results: For all the glosses, 44 entries were missing (range 2-14), and 6 entries had synonyms that were included in the analysis. The dataset consisted of 480 entries. 296 entries (61.7%) were classified as 2D, 118 (24.6%) as 3D, and 66 (13.75%) as "Other". 2D signs constituted the largest group in every sign language in the study, with the range between 54% and 71%. 3D signs ranged between 17% and 29.5%. The range of "Other" signs was 11%-17%. The difference in type distribution among the seven sign languages was not statistically significant (χ^2 (12) = 8.149, p = 0.773).

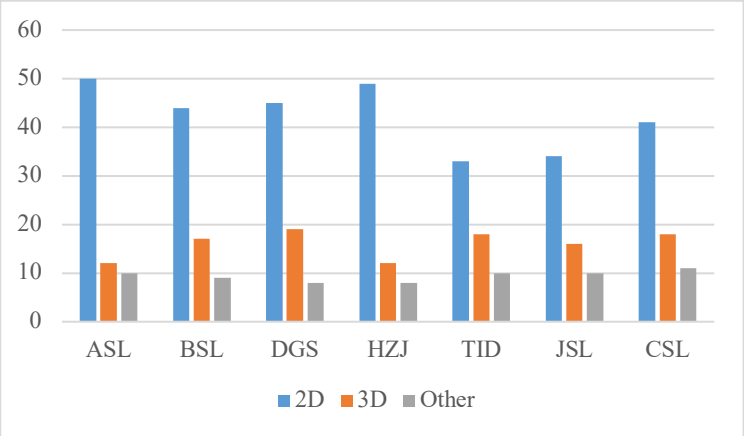

Fig. 1: The number of tokens of each type of signs per sign language.

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Metaphors and Repetition in the First U.S. Inaugural Addresses (1960 ~ 2021)

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Keywords: metaphors, repetition, inaugural addresses

The purpose of this study is to show the way in which metaphors in the U.S. first inaugural addresses and repetition are mixed to create rhetorical effects. This study seeks to identify 1) what metaphors and repetition are used in the first inaugural addresses in the 1960s to the 2000s (Campbell and Jamieson, 1990; Lim, 2002) 2) what kinds of repetition are commonly used with metaphors to construct context-induced political reality (e.g., Fairclough, 1993; Potter, 1996; Hart, 2008). Although past studies (Charteris-Black, 2004, 2005, 2014) systematically analyze functions and effects (Boeynaems et al., 2017) of metaphors in presidential speeches via the conceptual metaphor theory (CMT) (e.g., Lakoff & Johnson, 1980), they do not fully explain the feature of the combination of metaphors and repetition. Thus, there is room for further analysis of this issue in the inaugural addresses and supplementing the lack thereof.

For metaphor identification in the speeches, not just CMT but also the method propounded by Steen et al. (2010) and Charteris-Black (2014) were referenced as the first step; software, ATLAS.ti, was also utilized for the qualitative analysis and code creation. Under the procedure above, metaphors were classified into source and target domains to scrutinize similarities (conventional metaphors) and differences (novel metaphors). Second, the types of repetition were manually identified; finally, examples of the combination were extracted, as in the following John F. Kennedy's remarks: "We shall pay any price, bear any burden, meet any hardship, support any friend, oppose any foe to assure the survival and the success of liberty." This example shows the mixture of the parallel structure—V and N (verb any noun)—and JOURNEY and FIGHT metaphors. The types of repetition used in the speech are polyptoton, polysyndeton, anaphora, anadiplosis, epanadiplosis, chiasmus, epistrophe, triad, and parallelism. This study mainly focuses on the relationship between metaphors and parallelism due to the frequency of this combination. Overall, the top five source domains used with parallelism in the 12 speeches are JOURNEY, FIGHT, BODY PARTS, BUILDING, and PERSON (personification).

In conclusion, this study proposes the following three noteworthy findings: 1) metaphors tend to be mixed with parallelism to emphasize the theme of each speech; 2) the fusion of metaphors and repetition (parallelism) reflects how the presidents want the audience to perceive them, construction of an ideal presidential image; 3) the fact that social factors can affect the rhetoric lies behind the features given (1) and (2).

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We, you and beyond: intersubjective relations on COVID-19 public signs from Tallinn and Berlin

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Keywords: Intersubjectivity, Cognitive grammar, Grammatical person, Discourse analysis, Public sign, Estonian, German

The signs communicating COVID-19 related restrictions around the world have become a new genre of public discourse (see, e.g., Hua 2021; Dancygier et al. to appear), allowing for the traditional linguistic landscape paradigm (Shohamy & Gorter 2009) to be broadened. Linguistic research on COVID-signs does not only give an insight into how pandemic discourse is dependent on different linguistic means, but also offers a crucial perspective on crisis communication (e.g., Piller, Zhang & Li 2020).

One of the many linguistic aspects that can be analysed on COVID-signs is the grammatical person (e.g., Tragel & Pikksaar 2023). As one of the most complex grammatical categories (see Siewierska 2004; Langacker 2007), the use of person reveals how the author of a sign conceptualises themselves and participants of the discourse. In this presentation, we are tackling the cognitive domain of the conception of a speaker-hearer interaction: how the author of a COVID-sign (speaker) chooses to use linguistic means to express grammatical person or waives that choice.

In our ongoing research, we are comparing 225 COVID-signs from Tallinn, Estonia and 225 signs from Berlin, Germany. All these signs from both cities involve the discourses of mask wearing, hand disinfection, and/or social distancing. The linguistic means for expressing person on Estonian signs were automatically analysed with the Python package ESTNLTK (Orasmaa et al. 2016), while the German signs were tagged manually.

By analysing the intersubjective relations (cf. Langacker 2007, see also social deixis (Siewierska 2004)) on those signs, we want to show how different dynamics like inclusion, authority, and politeness are created through the use of person. For example, the first person plural form can create both inclusion and authority, depending on whether the use is inclusive ('We are protecting each other') or exclusive ('We require you to wear a mask'). Although neither Estonian nor German makes a grammatical distinction between the inclusivity and exclusivity of the first person plural, the scope of the person reference can be determined from the context and/or the construction in almost all cases.

Likewise significant is the employment of the respectful singular reference form, which both Estonian and German use in similar contexts. However, while Estonian uses second person plural for politeness (similar to French or Russian), German uses third person plural. In Estonian, the second person plural form allows the author to leave ambiguous whether they have meant the polite form or simply plural, but in German that grammatical choice must always be made.

Furthermore, there are also COVID-signs in both Estonian and German that neglect the use of person on the signs: like nominalisation in Estonian (*Maski kandmine on kohustuslik* 'Wearing a mask is compulsory'), or using only the infinitive form of the verb with no person marker at all in German (*Maske tragen* 'To wear a mask') Such tendencies can be interpreted as avoiding the choice of person and the consequent responsibility of an intersubjective relation with the addressee.

Since the COVID-signs in Estonia and Germany have an essentially consistent message, we can assume that whatever differences there are in the use of person, they stem solely from the differences in linguistic means and cultural contexts (cf., Ogiermann & Bella 2021; Bella & Ogiermann 2022 for other international comparisons). Thus, the comparative analysis of these signs enables us to study how intersubjective relations in discourse differ in Estonian and German. Furthermore, the use of person also reveals how these two languages balance politeness, inclusion, and authority in the pandemic discourse.

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Image-schematic representations of conceptual space - for experts only? Estonian verbs in drawing task

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Keywords: Verbs, Image schemas, Conceptual space, Free form drawing task, Estonian, Cognitive grammar

As cognitive linguists, we are interested in finding patterns in the general conceptual structure that is reflected in language. The assumption that our embodied experience is likely to be used for describing events has been tested before (cf. Meteyard & Vigliocco 2009, Spivey et al. 2005, Perlman Gibbs 2013). "Drawing" linguistic units has been a staple in Cognitive Linguistics since Langacker introduced his diagrams in 1980s (Langacker 1987) but the question remains whether non-experts can also come up with such visual representations.

The experiment was designed to study the direction of verbs. In a free-form drawing task with video screen captures, 21 participants were asked to draw directions of 24 verbs in Estonian. 20 verbs which express non-tangible concepts we chosen: *armub* 'falls in love'; *elab* 'lives'; *hakkab* 'starts'; *igatseb* 'misses'; *imestab* 'wonders'; *jääb* 'stays'; *jätab* 'leaves'; *juhtub* 'it happens'; *kardab* 'fears'; *lubab* 'allows~promises'; *määrab* 'determines'; *mäletab* 'remembers'; *meeldib* 'likes'; *mõtleb* 'thinks'; *palub* 'asks'; *suudab* 'can~manages; *tahab* 'wants'; *teab* 'knows'; *tunneb* 'feels'; *unustab* 'forgets'. Verbs from different semantic classes, e.g. schematic verbs, verbs of emotion, communication, memory, and perception were included. The verbs vary in their extent of polysemy and argument structure. Four concrete verbs (*sukeldub* 'dives'; *veereb* 'rolls'; *tõuseb* 'rises'; *taganeb* 'retreats') were used as controls.

Correlations were expected to be found between the visual representations of verbs in cognitive grammar (e.g. Langacker 1987) and non-experts, and with the results of previous studies. Manually coded features on the drawings were subjected to cluster analysis. This paper will present the results regarding the arrows used by participants. The most surprising result was that the direction to the right was not the main feature of any cluster of verbs. Drawings that did feature a right-direction arrow very often also included arrow(s) to other directions. More detailed results and possible reasons for them will be discussed in the presentation.

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Realizations of EVENTS in descriptions of everyday sounds

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Keywords: auditory experiences, soundscapes, conceptual structures, verb constructions

While earlier works in different disciplines have described auditory perceptions in detail, no earlier work has detailed how conceptual structures that relate to auditory experiences are realized in descriptions of everyday sounds. Sound correlates (e.g., pitch, loudness, or duration) are integral aspects of auditory experiences. They are, however, not the only elements that affect human perception and conceptualization of everyday sounds. When a sound is produced in the physical environment, a soundscape is created: an auditory environment made up of a range of features such as activities, states, interactions or contact between (in)animate entities. As previous research has shown, soundscapes are often realized as EVENTS, whose descriptions are often approached from different viewpoints and involve meanings of multiple content (Caballero & Paradis, 2020; Hartman & Paradis, submitted).

In this study, we asked 214 adult, native speakers of English to describe 20 pre-recorded, everyday sounds, in the form of acousmatic stimuli (i.e., no sound sources seen, just sounds heard). We prompted the participants to "describe the sound in as much detail as possible, as if you are describing it to someone that cannot hear it", to elicit responses which we consider emulations of sound descriptions in natural language use. Our data include 3,875 typed descriptions for the 20 sounds, a total of 51,089 words. The aim is to describe and explain how the participant responses realize conceptualizations of EVENTS that the participants associated with the 20 acousmatic stimuli. The analysis focuses on the constructions headed by 8,244 verbs. There are three questions at the core of the study:

1. What types of EVENTS and verb constructions are involved in the descriptions?
2. What aspects of the soundscapes are described through the verb constructions in the data?
3. How do the uses of the verb constructions relate to the descriptions of the soundscapes?

We designed an encoding scheme which includes four subsequent steps, as shown in Table 1. Step 1 focuses on whether the verbs communicate PROCESSES/ACTIVITIES or STATES. Step 2 identifies each construction as one out of the eight constructions shown in column 2, the list of which is data driven and developed in the analysis. Step 3 identifies how the constructions relate to the descriptions of the soundscapes in terms of motivation and subsequently step 4 specifies which aspects of the soundscapes the constructions profile.

We found that, overall, the sounds are described through realizations of PROCESSES/ACTIVITIES (66% of all verb constructions used in the data set) more often than STATES (34%). The distinction is more evident when the soundscapes described involve different types of interactions between the human body and the external environment, such as someone sipping tea (84% PROCESSES/ACTIVITIES vs. 16% STATES, in relation to the total of the verb constructions used to describe this sound), doing the dishes (73% vs. 27%) or walking on gravel (62% vs. 38%), and less evident for mainly non-human sources, such as the sounds coming from traffic in the street (59% vs. 41%) or a forest (56% vs. 44%). PROCESSES/ACTIVITIES are realized mainly by [X ACT] (24%) and [X DO Y] (22%) constructions across the sounds, as in *someone cooking in the kitchen* and *someone making breakfast*, while [X HAPPEN] (16%) constructions, as in *water moving around*, appear relatively less frequently. Passives realized by [X UNDERGO] constructions, as in *cars being driven*, are not as frequent (5%) across the sounds. STATES are described mainly by [X BE (Y)] (15%) and [X BE LIKE Y] (10%) constructions, as in *it's a fire* or *there is a road nearby*, and *what sounds like an apple* or *what seems to be a hot drink*. [X EXPERIENCE Y] (8%) and [X HAVE Y] (1%) constructions, as in *you can hear the cutlery* and *the sound has a general low-pitched hum*, have the lowest frequencies among the construction types.

Across the descriptions the frequencies of the constructions that focus on the source(s) of the sounds vary between 89% and 64% of the constructions used to describe each sound. The frequencies differ distinctively compared to the frequencies of the constructions that focus on the listener's engagement (range from 30% to 8%) and sound correlates (9% to less than 1%) in each sound. Overall, the results fluctuate considerably when the descriptions of the individual stimuli are taken into consideration. The analysis of the data showed that the type of stimulus described has a strong effect on both the type of the constructions that are used to describe each of the sounds and how the constructions profile the three aspects of the soundscapes. The study reports on both similarities and differences across the results.

EVENTS	Non-substantiated constructions	Motivation	Aspects of the soundscapes
PROCESS/ACTIVITY	[X DO Y] [X ACT] [X HAPPEN] [X UNDERGO]	*causal matching* *sound description* *justification* *reasoning* *emotional reaction*	source sound listener's engagement
STATE	[X BE (Y)] [X BE LIKE Y] [X HAVE Y] [X EXPERIENCE Y]		

Table 1: Encoding scheme: conceptual structures of EVENTS through uses of verbs

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ASTROMOTION – Moving to (and through) outer space

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Keywords: Construal, Corpus linguistics, Embodiment, Motion events, Outer space

To this day, fewer than 600 people have traveled into outer space. This means that most of us do not have any (embodied) experience of neither turbulent rocket ships nor the lack of gravity outside of our atmosphere. Instead, we conceptualize these experiences by relying on real and imaginary narratives readily available to us thanks to the great cultural interest in outer space. However, outer space is governed by vastly different physical laws than our lives here on earth, largely rendering our embodied experiences moot as we try to imagine what moving through space would be like. Thus, it stands to reason that conceptualizing the experience of moving through space is not entirely straightforward. Consequently, this paper aims to investigate how the physical experience of moving to, through and from outer space is construed in American English.

Motion has been studied extensively in the context of earth, with most studies starting from and building upon Talmy's (2000: 20) definition of a motion event as a figure moving along a path with respect to the ground. Scholars have identified and differentiated between motion with respect to different types of ground, such as AQUAMOTION, AEROMOTION, and TERRAMOTION (Divjak and Lemmens, 2007: 153), but no inquiry has been made into motion with respect to an outer space ground, an experience this author has dubbed ASTROMOTION.

The present study makes use of the Corpus of Contemporary American English (Davies, 2008), looking at motion verb collocates to the nouns space, outer space, and deep space. The primary findings are that control and speed and prevalent properties in the domain of ASTROMOTION; that the nature of space being ground-controlled results in rather complex agent/figure dynamics; and that there are few new coinages in the lexical field of ASTROMOTION. Rather, it is mostly made up of either general motion verbs or relexicalizations from the domains of AQUAMOTION and AEROMOTION.

The construal of outer space is informed by a triad of interacting and overlapping influences: empirical knowledge, embodied experience and imagination. Sometimes the language used is clinical and informed by our scientific understanding of space, noting the exact speed and force necessary to travel through it. Conversely, sometimes we zip and zoom around it effortlessly, or even imagine ourselves beaming over vast and impossible distances. To encompass all of our diverse ideas and imaginations of ASTROMOTION, we have ended up with a large lexical field with many different types of verbs.

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Verbal Classifier Features of the Igbo Verb Root

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Keywords: Igbo, Verb Root, Image Schema, Construal, Verbal Classifier,

This paper examines the verbal classifier features of the Igbo verb root in a multiword structure involving the combination of a verb root with a nominal or prepositional phrase (schematized as Verb+NP/PP). The structure is predominant in the Igbo language and functions as the equivalent of a single lexical item in an average European language. Some examples include *-má ụrá* 'slap' and *-tụ́ ime* 'impregante' for the Verb+NP structure, and *tụ́ n'ányá* 'surprise' for the Verb+PP structure. Both have been compared with the English phrasal verb (Nwachukwu 1987) and the German Funktionsverbgefüge (Uchechukwu 2006), and have also been described in almost similar terms as have been used for describing the English and German structures (e.g. *light verb*). However, the Igbo structures differ from these other structures in not having simple verb equivalents, contrary to the English and German languages whose complex structures also have simple verbs as functional equivalents, for example, *bring about* => *cause*, and *Beobachtungen anstellen* => *beobachten*. This lack of simple but functionally equivalent verb forms for the Igbo V+NP/PP structure, and the unlimited possibility of combining the small set of Igbo verb roots with various nominal and prepositional phrases to form new V+NN/PP structures, have given rise to the traditional view that the verbal components of such structures are empty/practically meaningless (Nwachukwu 1987; Emenanjo 1984). However, a cognitive linguistics approach to the structure has argued for an image schema motivation of their verbal components, with each of the above named verb roots being given the following schematic meanings: *-má* 'manipulate flat-shaped object', *-tụ́* (1) 'throw (with movement away from speaker and in an upward arched direction)', (2) 'land on/descend towards' (Uchechukwu 2005; 2006; 2011). This paper goes further into the issue by examining the relationship between the Igbo verb root and the other components of the structure from the perspective of a 'verbal classifier' system. Seen from this angle, some of the classificatory features identified in the literature for classifier languages (Allan 1977, 2001; Barron 1982) can be confirmed for the Igbo verb root. Also, an application of Allan's (1977) methods of (1) foreign observer's intuition, (2) native speaker intuition, and (3) the introduction of new items to the native speaker, whereby the same features identified by a foreign observer and a native speaker are used at the introduction of new items to the Igbo native speaker, further buttresses the verbal classifier features of the Igbo verb root. In conclusion, Langacker's view on the effect of a classifier in any noun classifier system also applies here. A classifier in any such system imposes a construal, and each classifier imposes a different construal on the same noun (Langacker 2008: 341); so also does each Igbo verb root impose a construal, and each verb root imposes a different construal on the same NP or PP component.

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Targeting in Media Communication – Cognitive Models and Computational Applications

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Keywords: targeting (cognitive process), media communication, multimodality, empirical linguistics, automation

One major issue for multimodal research in cognitive linguistics is how to be certain that viewers of media broadcasts construct meaning the way that analysts claim they're likely to do. We address this question by analysing the relationship between RT videos and audiences' comments to them. In a first step we thus need to establish the points of reference in the corresponding video (or beyond). We identify these drawing upon Talmy's (2018) cognitive mechanism of targeting. This is time-consuming to do manually, and thus we need to engage with another big question in our field at the moment, viz. how we can scale up our analyses in order to make them statistically valid and reliable.

Our analysis is based on 20 videos from RT's show SophieCo Visionaries and the top-level comments (i.e. we excluded comments replying to other comments) collected before RT was banned from YouTube in early 2022. The following examples were found under a video discussing 5G technology:

(1) Cant wait to perform brain surgery from home
(2) Extremely IGNORANT. 5g is 60 hz. 60 hz is the same as radiation therapy for cancer patients. People are fuckin stupid. No one needs more than 4g lte.
(3) May Jesus have mercy on your souls

Example (1) can be linked to a segment in which the show's guest explains how low-latency networks enable applications such as remote surgery. The situation is trickier with example (2), which does not reference anything specific in the video but rather the overall topic of the show. The type of comment exemplified by example (3) cannot be reliably related to anything in the video even by humans.

We discuss ways in which this human interpretation can be implemented, mirrored, or at the very least supported by software. To this end, the prototype of a system is evaluated that runs speech recognition with Whisper (Radford et al. 2022) on the videos, splits the results into sentences, and applies coreference resolution (Clark and Manning 2016). The results are then processed with a baseline system based on BM25 text similarity (Robertson & Zaragoza 2009) and a more advanced system that uses sentence embeddings fine-tuned on question answering systems (Reimers and Gurevych 2019) to compare the sentences from the video to the comments.

In the process of evaluating the results of our computational analysis we assess the compatibility of concepts and methods coming from cognitive linguistics and computer science. We don't just consider the cognitive mechanism of targeting, but also conceptual (viewpoint) blending (Fauconnier and Turner 2002) and stance-taking (Du Bois 2007). In doing so, we shed further light on the cognitive modelling of targeting as based on our data.

Finally, we will suggest for future research an extended system that goes beyond the text and also relies on automatic object recognition in the video to find further potential targets for the comments.

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Sneezing the napkin off the table: Mechanisms of valency coercion in eye-tracking

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Keywords: valency coercion, eye-tracking, construction grammar, caused motion, linguistic creativity

A central tenet of cognitive-linguistic approaches to grammar is that grammatical constructions have meanings that go beyond the lexical items that occur in them (Goldberg 1995). Evidence for this view comes particularly from examples such as (1), in which a non-motion verb (*sneeze*) combines with the caused-motion construction and is consequently "coerced" into a motion reading.

(1) Sally sneezed the napkin off the table. (Goldberg 1995: 6)

Such cases of "constructional coercion" or "valency coercion", in which speakers resolve a conflict between the semantics of the verb and the construction, have been widely discussed from a theoretical perspective (e.g., Audring & Booij 2016; Boas 2011; Lauwers & Willems 2011). On the other hand, psycholinguistic studies of the processing mechanisms and the time course that underlie valency coercion are so far lacking (Busso, Perek & Lenci 2021: 293). To address this research gap, we present what may be the first experimental study of how speakers comprehend instances of valency coercion in real time.

In our experiment, 50 English native speakers read naturalistic context passages such as (2) and answer comprehension questions about them. The critical section (see the highlighted part) consists of a caused-motion sentence that either contains (i) a prototypical caused-motion verb (*pushed*); (ii) a coerced verb (*sneezed*); or (iii) an anomalous control verb (*arrived*). To assess processing, we measure participants' eye movements at the regions after the verb: the noun phrase, the prepositional phrase, and the following words as a potential spillover region.

(2) Frank swallowed a red chili pepper at the dinner table. Tears streamed from his eyes, and he reached blindly for his napkin. Unable to control himself, **Frank pushed/sneezed/arrived his napkin off the table** and knocked over a few of the wine glasses.

In terms of our results, we predict that participants will read the noun phrase (*his napkin*) more slowly in the coerced condition than in the prototypical condition, given that they encounter a combinatorial conflict at this point. At the prepositional phrase (*off the table*) and the spill-over region, however, participants' processing in the coerced condition should be faster than in the anomalous condition, assuming that speakers integrate the verb and the construction semantics into a plausible sentence meaning. To further examine when and how speakers resolve the initial semantic conflict, we will analyze regressive eye movements, i.e., cases in which speakers look back to an earlier sentence region. We expect more regressions in the coerced condition than in the prototypical condition, suggesting that speakers incur an additional processing cost as they reanalyze the sentence.

Our results will complement the previous theoretical literature with an empirical, processing-based account of valency coercion. Moreover, given that coercion can be regarded as an instance of linguistic creativity (Bergs 2018), our findings can shed light on some mechanisms of creative language use, while also illustrating the use of eye-tracking techniques in investigating coercion and related phenomena.

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How do we categorize known and unknown ideophones?

A case study of Japanese reduplicated ideophones

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Keywords: ideophones, neologism, corpus, Japanese

Ideophones are defined as "marked words depictive of sensory imagery found in many of the world's languages" (Dingemanse 2012). Because of their depictive function or iconicity, ideophones are taken as a clue to explore linguistic evolution by many, most notably Haiman(2018). To judge whether a word is iconic, the similarity between its meaning and the image aroused by its form is evaluated. This means that we must know the meaning associated with the form before the judgment. Then, is it possible to find ideophones from unknown words (i.e., just by forms)? To determine how speakers detect ideophones from candidate forms, we conducted a questionnaire survey and analyzed the data.

Our target language was Japanese, which is known to be rich in ideophones (Hamano 1998). Since two repeated moras ($(C_1)V_1(C_2)V_2$–$(C_1)V_1(C_2)V_2$), such as *kirakira* (shiny), is the most common form of Japanese ideophone, we extracted all the reduplicated two moras from the NINJAL Web Japanese Corpus (Asahara et al. 2014), 844 words in total.

In the survey, we asked participants the following questions for each word: (1) Do you know this word? (2) Do you think it is an ideophone? (3) Can you imagine the sense it expresses? (4) Do you think it expresses a sound or a voice? (5) Do you think it expresses a condition or an emotion? There were 674 participants on Yahoo! Japan Crowdsourcing, and each participant was allowed to answer questions on 10 words at most. The participants answered by rating on a scale of 0–2 for question (1) and 0–5 for questions (2)–(5).

First, we performed a correlation analysis to determine whether the speaker sees ideophones as expressing sensory imagery according to the linguistic definition. The average ratings for ideophones (2) and sensory imagery (3) for all 844 types were positively correlated (0.89, $p<0.05$). Moreover, this positive correlation was significant (0.69, $p<0.05$) even for the words that >75% of speakers did not know. Second, we analyzed the rating for ideophones (2) using factors (1) and (3)–(5) using linear regression. The results show that while the familiarity factor (1) is not correlated for the rating for ideophones, factors (3)–(5) are positively correlated ($p<0.05$).

Our results show that Japanese speakers see ideophones as words that express sensory imagery regardless of their iconicity. We also found that speakers could categorize words that they had never seen before as ideophones. For example, while both had extremely low familiarity rates, "*afuafu*" was often categorized as an ideophone but not "*kafukafu*" despite the similarity in form.

Schmid(2008) proposed three stages of the establishment of new words: creation, consolidation, and establishing. Our results are the first step toward showing how a newly created ideophone can be shared by others and open the possibility of proceeding from the first to the second stage of establishment. As a next step, we plan to investigate the conditions speakers use to distinguish between ideophones and non-ideophones among unknown words.

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Investigating Literacy Related Differences in Adult Turkish Native Speakers: the Aorist Suffix

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Keywords: Literacy effects, Print exposure, Turkish aorist, individual differences, morphology

Turkish, as an agglutinative language, marks the aorist with -r, -Ar- or -Ir (capital letters indicate vowel harmony). Evidence from acquisition studies show that Turkish children experience problems particularly with conjugating monosyllabic verbs correctly that end with a sonorant [/l/, /r/, /n/] up until age 4,6 and sometimes well into schooling (i.e., **bin-ir* instead of *bin-er* [s/he gets on]) (Nakipoğlu & Ketrez 2006). Michon and Nakipoğlu (2020) (M&N hereafter) tested the knowledge of adult native speakers of Turkish (n= 90) on the aorist using a nonce monosyllabic sonorant ending word task. They report that 86% of the elicited aorist attached nonce-verbs were used with -Ar and 14% with -Ir. The authors conclude that adult speakers predominantly use -Ar with nonce-verbs because they argue that ‘’an already attained symbolic abstraction … of -Ar takes the center’’ (M&N 2020: 22). Therefore, they take the frequent use of -Ar as evidence that ‘’a rule-driven generalization where analogy clearly plays a minor role’’ (M&N: 24). By this token, all L1 adult Turkish speakers should follow this underlying rule and converge on the same grammar in the Chomskyan sense (i.e., the convergence hypothesis). Based on our corpus queries from the Turkish National Corpus, table 1 shows that -Ir is more frequently used in written language with monosyllabic sonorant ending verbs than -Ar. We know from a body of evidence that literacy leads to extracting different generalizations (Street & Dąbrowska 2010; Dąbrowska 2018). Literacy differences in Polish leads to individual differences (IDs) in the use of masculine, feminine, or neuter forms of nouns in the Polish genitive, which is subject to many exceptions, in adult native speakers (Dąbrowska 2012). Based on suggestive evidence from M&N and our corpus queries, we hypothesize a converse relationship between literacy and the use of -Ar, i.e., different generalizations. We use a battery of literacy measures to quantify print exposure and recruit people with high academic (i.e., postgraduates, lecturers), and low academic attainment backgrounds (i.e., high school graduates). Using the same fill-in-the-blank method from M&N in Google Forms, we created 62 nonce-verbs across 6 consonant-vowel patterns plus 10 control verbs (see table 2 for examples). Based on our preliminary results among 53 participants, we found a moderate negative correlation (r= *-.25,* r^2= 6.3%, figure 1) between self reported literacy and -Ar, with less literate speakers using more -Ar in sonorant ending monosyllabic nonce-verbs, and the percentage of -Ir is much higher than what is reported in M&N (62.4% > 14%). Similarly, a weak positive correlation is observed between literacy and -Ir (r= *.26,* r^2= 6.9%, figure 2). Both results showed 1-tailed statistical significance (*-Ar;* p= *.037, -Ir;* p= *.03*). This confirms our hypothesis and seems to partially shed light on IDs in representing the aorist suffix, with more literate speakers possibly representing highly frequent exemplars that combine with -Ir and generalizing them to other verbs. This does not rule out the productive and analogy driving effects of -Ar, but provides the first account for why some L1 adult Turkish speakers show IDs in their representation of the aorist suffix. The importance of this study lies in its novelty in approaching Turkish from a usage-based perspective with IDs in mind, especially considering that the convergence hypothesis still holds an important place in our linguistic theories (e.g., Dąbrowska 2016).

Table 1, estimated corpus frequencies derived from true positive rate of the first 200 lines in the Turkish National Corpus

		Written (per mil)	Spoken (per mil)	Total (per mil)
Monosyllabic+sonorant				
-ar	type	27202 (547.71)	767 (756)	27969 (551.46)
	token	37694 (758.97)	2386 (2353)	40080 (790.254)
-ır	type	23316 (469.47)	426 (420.10)	23472 (468.11)
	token	73834 (1286.66)	596 (587.75)	74430 (1467.53)

Table 2, control verbs were either mono- or multisyllabic; the first sentence provides the use of the nonce verb in the Turkish simple past construction and then uses the context to introduce an adverbial that would trigger the Turkish simple present tense, in which the aorist would be required, and asks participants to fill in the blanks.

bak	İş arkadaşım iki gün önce bana baktı. İş arkadaşım iki gündür bana bak___ .
jan	İsmail geçenlerde jandı. İsmail iki saatte bir jan__.
vur	Ece geçen gün vurdu. Ece her gün vur___.
Var	Dilara iki ay önce oraya vardı. Dilara her pazartesi oraya var___.
jen	Beril on yaşındayken jendi. Beril her sene jen___.
zar	Adem beş yaşındayken zardı. Adem her yılın ilk günü zar___.
çan	Çocuklar dün gece çandı. Çocuklar aslında her gece çan___.
mar	Balıklar o gün mardı. Balıklar her gün mar___.
şal	Kedimiz Çiko iki sene önce bugün şaldı. Kedimiz çiko her salı akşamı şal___.
cal	Bahçedeki civcivler caldı. Bahçedeki civcivler her sabah cal__.
hal	Babamın çalıştığı yer haldı. Babamın çalıştığı yer her ay hal___.

pan	Babaannem on beş yaşındayken pandı. Babaannem her yılbaşında pan____.
çün	Okulun temizlik işçisi çündü. Okulun temizlik işçisi her dersten sonra çün___.
pin	Telefon satan amca pindi. Telefon satan amca sürekli pin___.
pün	Komşumuz ilk taşındığında pündü. Komşumuz her öğlen pün___.
zır	Bebekler doğduklarında zırdı. Bebekler her gece zır___.
şol	Göller bu sene de şoldu. Göller her sene şol___.
cül	Taksi şoförleri cüldü. Taksi şoförleri her iş sonrasında cül___.
hıl	Eczane çalışanları hıldı. Eczane çalışanları her gün hıl___.
mür	Anaokulu öğretmenimiz mürdü. Anaokulu öğretmenimiz her ay mür___.
jun	Yurt güvenlikleri jundu. Yurt güvenlikleri her gece saat 10'da jun___.
çon	On yaşındaki kardeşim çondu. On yaşındaki kardeşim her gün çon___.
pön	Çocuklar öğretmenlerine pöndü. Çocukları her ders öğretmenlerine pön___.
şül	Annemin arkadaşı şüldü. Annemin arkadaşı her gün saat 3'te şül__.
vır	Bazı insanlar vırdı. Bazı insanlar her ay vır___.
col	Askerler bugün coldu. Askerler her yemin töreninde col___.
jın	Çocuklar sokakta jındı. Çocuklar uyandıklarında sokakta jın__.
çen	Babalar iki gün önce çendi. Babalar her iki senede bir çen__.
mör	Anneannem beş sene önce mördü. Anneannem her altı ayda bir mör___.
cil	Şirket çalışanları cildi.

	Şirket çalışanları maaş günlerinde cil___.
zür	Gelin dün gece zürdü. Gelin her gece zür___.
hil	Atlar sabah erken saatte hildi. Atlar her sabah hil__.
hül	Kedimiz geçen ay hüldü. Kedimiz her sene bu ay hül___.
şıl	Babamın sekreteri şıldı. Babamın sekreteri her pazartesi günü şıl___.
hel	Okumayı öğrenen çocuk heldi. Okumayı öğrenenler çocuk her gün hel__.
pun	Polisler iki ay önce pundu. Polisler her gün pun___.
zer	Domatesler artık zerdi. Domatesler bu mevsimde zer__.
jün	Kardeşim dün gece jündü. Kardeşim her gece jün___.
zir	Teyzelerimin hepsi geçen hafta zirdi. Teyzelerimin hepsi her hafta zir___.
cul	Koyunlar bu sabah culdu. Koyunlar her sabah cul__.
çön	Öğrencilerim geçen ay çöndü. Öğrencilerim her ay çön__.
pen	Fen bilgisi öğretmenleri pendi. Fen bilgisi öğretmenleri her cuma günü pen__.
şul	Çocuk geçen gün şuldu. Çocuk her gün şul___.
vir	Çaylar virdi. Çaylar her iki dakikada bir vir___.
jön	Okul müdürü üç hafta önce jöndü. Okul müdürü her pazartesi günü jön___.
vür	Restoranlar geçen sene ilk kez vürdü. Restoranlar her salı günü vür___.
mer	Denizler iki sene önce merdi. Denizler her sene mer___.
hul	Pilot, kalkıştan önce uçağı huldu. Pilot, her kalkıştan önce uçağı hul__.

pın	Terzi, iğneleri pındı. Terzi, iğneleri her gün pın__.
höl	Yemekhane fiyatları höldü. Yemekhane fiyatları her ay höl__.
şil	Hemşireler geçen hafta şildi. Hemşireler her hasta geldiğinde şil___.
çun	Arabamız çundu. Arabamız her akşam çun__.
mir	Bahçedeki köpek mirdi. Bahçedeki köpek karanlık olunca mir__.
hol	Yeni yıl takvimleri holdu. Yeni yıl takvimleri her sene Aralık ayında hol___.
şel	Saçlarımın rengi şeldi. Saçlarımın rengi her iki ayda bir şel___.
vör	Arkadaşlarım bana vördü. Arkadaşlarım bana hep vör__.
cıl	Bugün yumurtalar cıldı. Hava her soğuduğunda yumurtalar cıl___.
zor	Bugün bıyıklarımı zordu. Her gün bıyıklarını zor___.
jin	Yaptığım yemek jindi. Her gün yaptığım yemek jin___.
zör	Kızımın dişleri zördü. Kızımın dişleri yedi ayda bir zör__.
mur	Evimizin halısı murdu. Evimizin halısı her yaz mur___.
çın	Masamdaki güller çındı. Masamdaki güller üç saatte bir çın___.
ver	Babam bana kalem verdi. Babam her ödev yaptığımda bana kalem ver___.
zur	Virüs artık zurdu. Virüsler her iki ayda bir zur___.
cöl	Pişirdiğim ekmek cöldü. Pişirdiğim ekmek her zaman cöl__.
cel	Tarlamız geçen akşam celdi. Tarlamız hasat zamanında her zaman cel___.
mor	Yanaklarım bugün mordu.

	Yanaklarım soğuk olduğunda hep mor___.
çin	Yemeklerimiz bugün çindi. Yemeklerimiz her gün altıda çin___.
pon	Atların kuyrukları pondu. Atların kuyrukları her sabah pon___.
mır	Kahvelerimiz bugün de mırdı. Kahvelerimiz her gün mır___.
jon	Oyuncular geçen oyunda jondu. Oyuncular her oyun öncesi jon___.
vor	Bu ay param vordu. Her ay param vor___.
al	Annem bana çiçek aldı. Annem her doğum günümde bana çiçek al___.
gör	Kardeşimi arkadaşlarıyla gördüm. Kardeşimi her teneffüste arkadaşlarıyla gör___.
kapan	Restoranlar gece yarısında kapandı. Restoranlar iki senedir her gece yarısında kapan__.
okun	Sabah istiklal marşı okundu. Her sabah istiklal marşı okun__.
çal	Sevgilim bu sabah gitar çaldı. Sevgilim her sabah gitar çal___.
dal	Arkadaşlarım bu yaz daldı. Arkadaşlarım her yaz dal__.
pişir	Babam bize iki akşam önce yemek pişirdi. Babam bize her cuma akşamı yemek pişir__.
bakın	Öğretmen etrafına bakındı. Öğretmen her ders etrafına bakın___.
bükül	Yüzük yapmak için demirler büküldü. Yüzük yapmak için her sabah demirler bükül___.
yarıl	Komşumuzun oğlunun kaşı yarıldı. Komşumuzun oğlunun her maçta kaşı yarıl___.

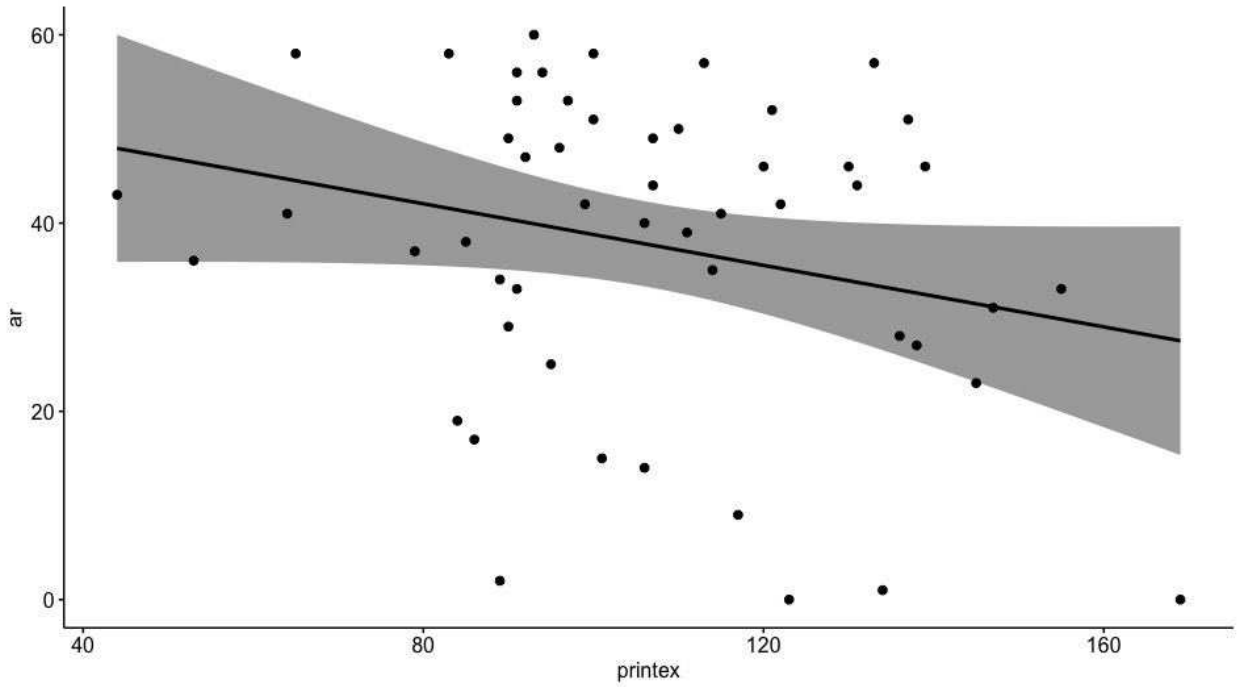

Figure 1. Print exposure X -Ar

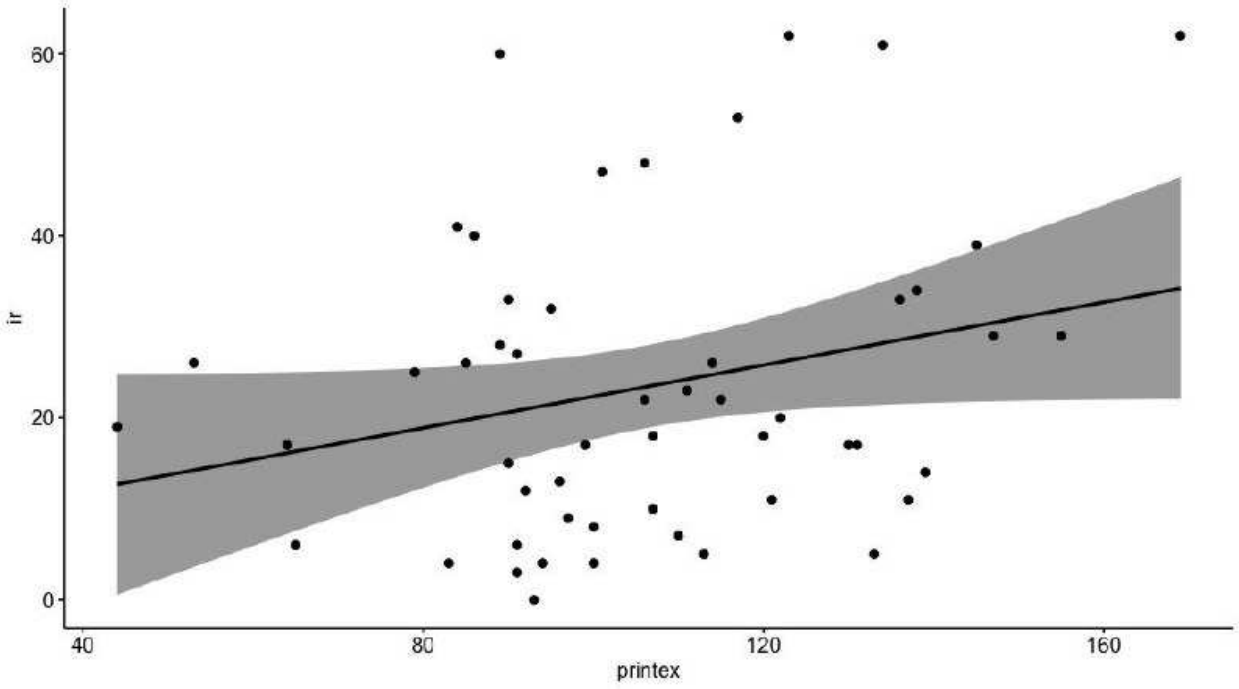

Figure 2. Print exposure X -Ir

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Effects of Emergent Bilingualism on the Cognitive Control of Four-Year-Old Children.

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Keywords: Bilingualism, L2 learning, Executive Function, Statistical Learning

Background: The effects of bilingualism on cognitive control have been significantly debated. A number of studies report better cognitive performance in bilinguals in Executive Function (EF) and Statistical Learning (SL) (Abutalebi et al., 2013; Barac et al., 2016; Bonifacci et al., 2011; Kuo & Anderson, 2012), yet others dispute the existence of any advantage (Duñabeitia et al., 2014; Paap et al., 2014; Yim & Rudoy, 2013). The lack of consensus is due to inconsistent experimental instantiation of key constructs. Bilingualism is viewed as a binary rather than a continuous variable, with researchers drawing an artificial dichotomy between monolinguals and bilinguals, who inevitably differ on more aspects than just the languages they use (Kaushanskaya & Prior, 2015). Many studies assess young adults with ceiling performances, making differences difficult to detect (Valian, 2015). The relationship between EF, SL and bilingualism may be more robust during childhood when both language and cognition are rapidly maturing. Furthermore, studies measuring EFs often use very few tasks, failing to capture the complexity of these processes (Friedman et al., 2008). Finally, the effects of bilingualism on SL are still very obscure, as researchers suggest that observed improvements simply reflect better EF (Bulgarelli et al., 2019). In sum, literature suffers from inadequate measuring and modelling of both bilingualism and cognitive processing.

Aim: We aim to identify the influence of emerging bilingualism on the EF and SL skills of four-year-old children and elucidate the relationship of the three.

Method: Two groups of Greek preschool children, a control (N = 38, M = 49.8 months, SD = 3.51) and an experimental group (N = 40, M = 50.8, SD = 3.34), were tested longitudinally at two points in time, seven months apart. Between testing sessions, the experimental group received second language (L2) (English) training as part of their school curriculum, whereas children in the control group attended kindergartens that did not offer English. We developed multiple tasks to measure performance in three core EF components [Inhibition, Working Memory (WM), Cognitive Flexibility (CF)] as accurately as possible, and controlled for verbal and non-verbal intelligence. We also adapted and used a novel complex SL task (namely Structure Learning), presenting children with probabilistic, stochastic sequences. The tasks were administered twice, pre and post L2 learning. Linear mixed-effects regression models were used to measure the effects of group on Difference (Δ) in performance between Phase 1 and Phase 2. Further regression models were used to evaluate more nuanced effects of L2 input and L2 proficiency. Finally, we assessed the directness of L2 learning effects on SL.

Results: A significant effect of group on Difference (Δ) in performance between Phase 1 and Phase 2 in certain CF and WM tasks was found ($p < .05$), with the experimental group performing significantly better. Specific effects of L2 input and proficiency were detected, which were not equivalent in all of the tasks. We also showed that effects of L2 learning on SL were over and above those contributed by EF improvement. Our rich cognitive battery demonstrated that the effect of L2 learning was not omnipresent, highlighting that the cognitive processes in question are complex and not equally susceptible to language-related training.

Conclusions: Effects of L2 learning on the cognitive performance of young children were detected, even after short L2 exposure. Our study offers evidence of training-related brain plasticity in EF and SL, which is valuable for designing effective developmental interventions. The effect was not ubiquitous, illustrating the complexity of these cognitive processes and the need for multiple tasks to measure them reliably.

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Fictive motion event structure in Estonian

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Keywords: fictive motion, motion event structure, Estonian

In addition to the extensive research into the typology of real motion events, research into fictive (or subjective) motion has been of increasing interest since the key works of Talmy (Talmy 1983; Talmy 1996), Langacker (Langacker 1986), and Matsumoto (Matsumoto 1996a; Matsumoto 1996b). According to motion event typology, Estonian is a satellite-framed and high-manner-salient language (Taremaa 2017). Previous studies of Estonian have postulated semantic congruency in real motion clauses (something which overrides goal-over-source bias) and the windowing of attention in fictive motion events (Taremaa 2013; Taremaa & Kopecka 2022). According to Matsumoto (1996b), two conditions apply to expressions of fictive motion: the Manner Condition (the manner of motion cannot be specified, unless it is used to describe a related path feature) and the Path Condition (the path of motion must be specified).

This study set out to investigate what aspects of path and manner are expressed in different fictive motion expressions in Estonian. The study seeks to examine how the expression of manner and path depends upon the event type (whether the path event is travellable or non-travellable) and the verb type (path, manner, slow-neutral-fast). A corpus study of fictive motion expressions was conducted involving three Estonian fictive motion verbs and four frequent subject nouns. Three verbs were selected in order that one expressed fast motion (the manner verb *jooksma* 'to run'), one slow motion (the manner verb *kulgema* 'to move forward'), and one neutral motion (the path verb *minema* 'to go'). Two subject nouns expressed a travellable path (*rada* 'path, track'*, tee* 'path, road') and two a non-travellable path (*piir* 'frontier'*, toru* 'pipe, pipeline'). Up to 200 sentences with each verb + subject noun combination was randomly selected from the Estonian Reference Corpus (2021) and analysed (2077 sentences in total). Each fictive motion clause was coded for motion-related variables of space/path and manner (Source, Location, Trajectory, Direction, Goal, Manner). Correlation analysis was used to obtain an overview of the data.

The preliminary results of the study reveal that each verb shows a different event pattern. Trajectory is generally the most frequent category expressed in the FM sentences with the verb-noun combinations we studied (47% of all sentences contained Trajectory). However, there are differences between the preferences in different verb and noun combinations. For instance, the slow motion verb *kulgema*, with the noun *rada* 'path, track' as subject, often occurs in combination with Location (66% of all *kulgema+rada* sentences). The neutral motion verb *minema* 'to go', with the noun *toru* 'pipe, pipeline' as subject, often occurs in combination with Goal (67% of all *minema+toru* sentences). In this presentation, we shall discuss the patterns revealed and attempt to explain differences in the expression of fictive motion events as compared with real motion events. The results of the study suggest that the presence in the fictive motion clause of different path and manner expressions (Source, etc.) depends on both the verb type and the type of the path (i.e. the semantic type of the subject noun in the clause).

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Perceptual chunking of spontaneous speech: Linguistic cues and cognitive constraints

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Keywords: chunking, speech perception, prosody, syntax, individual variation, cue degeneracy

Chunking has been proposed as an underlying mechanism of processing speech in real-time (Sinclair & Mauranen 2006; Christiansen & Chater 2016). Just what the chunks are is open to debate. The linguistic tradition strongly suggests that chunks are some kind of form-meaning pairings. For example, Christiansen and Chater (2016) suggest that processing chunks determined by the memory constraint are essentially the same chunks we learn during language acquisition and the same chunks in which language change proceeds. In contrast, neuroscience links chunking to neural oscillatory activity at different frequency bands and its possible alignment with corresponding linguistic information at different levels of language organization, from syllables up, providing optimal information processing (e.g. Giraud & Poeppel 2012). The "phrasal" delta frequency band seems to associate with prosodic (Inbar, Grossman & Landau 2020; Stehwien & Meyer 2021) and/or syntactic units (Ding et al. 2016; Kaufeld, Bosker & Martin 2020). Some studies suggest that chunking is driven by timing (Roll et al. 2012) or delta-band oscillations themselves (Henke & Meyer 2021). To contribute to this debate, we examine the processing of linguistic cues as they naturally occur in spontaneous speech and ask which linguistic cues and cognitive constraints have an effect on real-time chunking.

While neurophysiological studies commonly employ short constructed stimuli modelled on written language, we selected 97 short extracts from spoken corpora and re-recorded them with a trained speaker to achieve uniform audio quality. We then asked 50 experiment participants to listen to the extracts and intuitively mark chunk boundaries in the accompanying transcripts through a custom-built tablet application *ChunkitApp* (Vetchinnikova, Mauranen & Mikušová 2017; Vetchinnikova et al. 2022; https://www.chunkitapp.online/). Next, we annotated all spaces between every two words for pause duration, prosodic boundary strength, clausal syntactic structure, chunk duration and bigram surprisal and entered them as predictors of chunk boundary perception in mixed effects logistic regression models with random effects for listeners and extracts.

We found that in chunking up speech listeners used a variety of cues across different levels of language organization in an integrated manner which supports non-modular approaches to language. The presence of multiple cues which perform the same function also indicates cue degeneracy which is typical of biological systems (Winter 2014). Cue degeneracy in its turn supports extensive variation which we observed in listener preferences for different cues and in the extent to which they tracked them as well as in the reliability of the cues across different speech materials. Chunk duration had a strong effect, supporting the cognitive constraint hypothesis. The effect of surprisal did not support the hypothesis that perceptual chunks were multi-word form-meaning pairings: chunk-final words tended to be less predictable while chunk-initial words tended to be more predictable suggesting that chunking speech into perceptual groups is different from statistical learning of multi-word units from the input. Together these results suggest that perceptual chunking is a distinct process: to overcome the limitations of working memory, humans not only combine items into larger units for future retrieval (usage-based chunking), but also partition incoming stream into temporal groups (perceptual chunking).

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Exploring individual variation in constructional schematicity using random effects

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Keywords: individual differences, usage-based construction grammar, chunking, reduction, mixed-effects models

This paper builds on two theses: 1) language is an inventory of constructions at different levels of schematicity and 2) personal construct-i-cons vary as a function of usage. With repeated use, constructions move along the continuum from more schematic to more lexically specified through the process of chunking and can undergo reanalysis. A well-known example is *I don't know,* which is phonologically reduced and conveys an additional pragmatic function of mitigated disagreement when used as a unit (Bybee & Scheibman 1999). Reduction is a typical property of chunks and can serve as a diagnostic of a change in the internal structure of an expression. Given individuality of language usage, to what extent do different instantiations of constructions vary in schematicity in personal construct-i-cons?

As a case study, I used a 1.75-million-word corpus of comments posted by one blogger over 8 years. As a dependent variable, I chose the alternation between contracted and uncontracted forms of *it is* hypothesizing that it was more likely to be reduced in chunks. *It is* occurs in a wide variety of syntactic structures including clefts, progressives, passives, extraposed and copular structures: altogether 10,000 corpus occurrences of *it is/it's* were categorized into 15 frequent constructions. For each lexical item filling the open slot, I used delta P statistic to compute the degree to which it associates with a construction and the degree to which the construction associates with it (Gries & Ellis 2015). In addition, in a logistic regression model predicting the contracted form, I included possible priming and temporal order of occurrence as fixed effects and lexically specified instantiations of constructions as random effects. Variance in random intercepts showed variation of lexically specified instantiations in schematicity and variance in random slopes for the effect of temporal order showed change in schematicity over time.

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The main functions of linguistic hedging in conversational discourse: a corpus-based study

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Keywords: linguistic hedging, functions of hedging, conversational discourse, conversation, corpus-based study

For human beings, conversational discourse is the primary source of interaction and a natural way of meeting social needs in a society. One of the common forms of conversational discourse is everyday dialogue. It constitutes the bulk of most people's daily linguistic activity and refers to the main driving force of various linguistic changes.

Conversational discourse refers to the cooperative work of interlocutors. Within this kind of interaction, the listener ongoingly interprets the speaker's communicative intentions expected to be responded to by the former. In conversational discourse, dialogue is a complex and multifaceted phenomenon. All interactants pursue their own communicative goals to achieve effective and successful communication. In the context of everyday conversation, successful interaction is achieved through a pragmatic strategy such as linguistic hedging.

Hedging is an essential element of any communication that allows the speaker to formulate non-categorical statements, get the interlocutor's support, and, thus, avoid conflicts. Hedged statements help to maintain relations between interlocutors making their speech evasive, fuzzy, polite, and euphemistic. All hedges are divided into two types: the first type of hedges affects the semantics, while the second one affects the pragmatics (Prince, Frader, & Bosk. 1982).

This study focuses on the fundamental functions of linguistic hedging that are conditioned by the specificity of conversational discourse. Spoken dialogues extracted from the British National Corpus (BNC) served as research data. Based on collected dialogues, the main functions of hedges in conversational discourse were defined and described by utilizing qualitative and descriptive methods.

The preliminary results of data analysis show that in conversational discourse hedging is used (1) to modify the truth degree of a proposition, (2) mitigate a categorical statement, (3) attenuate the speaker's responsibility for the statement, and (4) save the face of the speaker and/or the listener. Thus, the first function focuses on altering the semantic content of a statement, while the other three functions are centered on changing the pragmatics of a statement. Moreover, hedging refers to an intently used strategy that allows interlocutors to maintain and harmonize their communication.

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Be going to and *gaan*: A contrastive study of *go*-futures in English and Dutch

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Keywords: *be going to*, *gaan*, temporal structure, grammaticalization, C-gravitation

English and Dutch have their respective *go*-futures, i.e., *be going to* (BGT) and *gaan*, as in (1) and (2). There have been mainly three types of studies on their comparison: (i) an analysis where BGT and *gaan* both represent a future situation with present orientation (Beheydt 2005); (ii) a distinctive collexeme analysis (Hilpert 2008); and (iii) an analysis based on grammaticalization and/or subjectification (van Olmen and Mortelmans 2009).

(1) I'm going to have a baby. (Haegeman 1983: 155)
(2) Ik ga morgen werken. (Haegeman 1983: 156)
'I'm going to work tomorrow'

These studies have some problems, however. Analysis (i) cannot explain why *gaan* occurs much less than BGT and other forms (e.g., *zullen* 'shall' or *moeten* 'must') often correspond to BGT, as in (3) and (4), and why the degree of grammaticalization of *gaan* is lower than that of BGT, as implied by (5), where BGT, unlike *gaan*, co-occurs with stative verbs. Although analysis (ii) revealed some differences between the two *go*-futures by statistically clarifying what kinds of predicates they tend to collocate with, it attributes the differences to the different collocation patterns (i.e., constructions) and does not explain why the two *go*-futures should beahve the way they do, not the way around. While analysis (iii) showed the differences in the degree of grammaticalization and/or subjectification between BGT and *gaan*, it does not consider the tense and grammatical systems of English and Dutch to explain how such differences have arisen and what promotes them.

(3) a. "The Barzinis and Tattaglias are going to move in on us real hard, Mike…"
(M. Puzo, *The Godfather*, p.411)
b. "De Barzini's en de Tattaglia's zullen hard toeslaan, Mike…"
'(Lit.) The Barzinis and Tattaglias shall hit out, Mike…' (*De Peetvader*, p.439)
(4) a. "And now you are going to cry!" said the little prince. (*The Little Prince*, p.71)
b. --En nu moet je huilen, zei de kleine prins. (*De Kleine Prins*, p.73)
'(Lit.) "And now you must cry," said the little prince.'
(5) I'm going to be forty in a few years. (S. Sheldon, *Master of the Game*, p.204)

This study aims to systematically explain the aforementioned differences as well as solving the problems mentioned above in a temporal structure analysis based on the comprehensive model of tense interpretation proposed by Wada (2013, 2019, 2022), which places emphasis of the meanings of constituents of tense forms, so lack of the progressive form and infintival marker in *gaan*-futures motivates temporal phenomena different from those of BGT-futures. A temporal structure consists of information about relations between speech time, the time of orientation and event time(s), and the "cognitive schema" reflecting the schematized temporal information related to elements constituting the tense form involved. The semantic uses indicated by BGT and *gaan* have temporal structures with some parts or others being different, which is caused by such notions as focus (profile) shift, segment profiling (partial foregrounding), and semantic bleaching. I argue that this analysis can explain, depending on the different temporal structures of BGT and *gaan*, how the two *go*-futures have developed different semantic uses and what types of predicates they tend to collocate with.

The proposed analysis can also motivate the lower degree of grammaticalization and/or subjectification of *gaan* than that of BGT with the notion "C-gravitation", the gravitation toward the consciousness of the speaker fixed at speech time (Wada 2018), which brings about grammatical phenomena such that the speech situation (including speech time) is salient and "featured". Since *go*-futures have originated as temporal expressions representing the present-oriented future and hence featuring the speech situation, C-gravitation can be considered as a driving force which triggers the primary grammaticalization of *go*-futures (cf. Nicolle 2012). However, since the degree of C-gravitation is much lower in Dutch than in English (Wada 2018), further grammaticalization is constrained in Dutch, so that the semantic range of *gaan* is more restricted to the uses with present orientation (original uses). In contrast, due to the higher degree of C-gravitation, grammaticalization in English is not constrained and thus reaches the second stage that allows an expansion of uses (through a generalization of grammatical function), so BGT develops less original, less present-oriented uses, including those corresponding to forms other than *gaan*.

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An experimental investigation into the perception of Chinese sound symbolism

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Keywords: Sound symbolism, Sound iconicity, Chinese, French, Experiment

Humans know instinctively which sounds are more appropriate than others for different categories of meaning. Native speakers could recognize a motivated association between the signifier and the signified in their language, and they could also identify the sound iconicity in a language that they do not know.

The current research investigates the perception of sound symbolism of speakers whose native languages belong to different language families. Under a cognitive framework, phonological space and semantic space reside in conceptual space as two aspects of human cognitive organization and are coordinated by a symbolic structure in a bipolar system. The symbolic structure resides in a link between a semantic structure and a phonological structure "such that either is able to evoke the other" (Langacker 1987; Langacker 2008).

Based on previous research using proper names in different languages (Sidhu & Pexman 2015; Kawahara, Noto & Kumagai 2018) and the results of sound-meaning association attested in corpus analysis concerning Chinese (Thompson 2018; Wang 2022), we developed an online experiment to test the perception of the association between sound and meaning with Chinese proper names among Chinese native speakers and Francophone participants (Klink 2000; Auracher, Menninghaus & Scharinger 2020).

The results indicate that both Chinese and Francophone speakers tend to associate specific phonological structures (phoneme and syllable combination) with certain physical characteristics (gender, volume, strength, and nature of the referent) and emotional characteristics (positive and negative) (see Fig. 1). However, we found different patterns for the two groups. Chinese speakers didn't recognize sound-emotion correspondence and Francophone speakers were less sensitive to sound-nature correspondence than other sound-meaning associations in Chinese proper names. Our result suggests a universal tendency of sound-meaning correlation perception referring to human bodily experience and certain language-specific characteristics which reflects the impact of cultures.

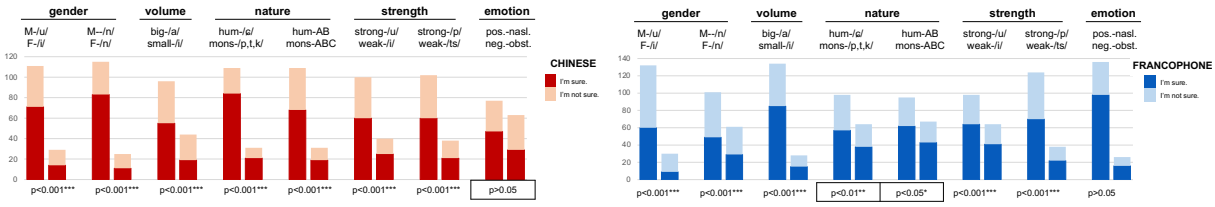

Fig. 1: Perception of sound-meaning correspondences by Chinese (left) and Francophone (right) participants.

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Schematic Diagrams and L2 Mental Simulation of English Prepositional Phrases

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Keywords: schematic diagram; mental simulation; second language processing; English preposition; semantic priming

Embodied simulation hypothesis supposes that language processing involves the activation of perceptual-motor systems to recreate the described scene (Bergen 2019). It has been found that mental simulation effects are modulated by factors such as the abstractness of meaning (literal vs. metaphorical) and visual stimulus presentation time (i.e., stimulus onset asynchrony (SOA))(Bergen et al. 2007). Previous mental simulation research primarily focused on L1 processing and reported compatibility and interference effects (Liu & Bergen 2016), while not enough attention has been paid to the mental simulation in L2 processing (Wheeler & Stojanovic 2006). In L2 pedagogy inspired by cognitive linguistics, schematic diagrams have been increasingly used as visual imagery tools with facilitative and inhibitory effects being found (Boers 2011; Tyler, Mueller & Ho 2011), but the examination of schematic diagrams still needs empirical psycholinguistic evidence from L2 learners.

The current study investigates L2 learners' mental simulation of English prepositional phrases cued by schematic diagrams and whether any observed mental simulation effect is modulated by prepositions (*over* vs. *in*), the abstractness of meaning (spatial vs. extended) and SOA (1040 milliseconds vs. 2040 milliseconds). 79 adult L2 English learners participated in the study. All of them were Chinese-L1 speakers with advanced English proficiency (IELTS > 6.5). The diagram configures the prototypical spatial sense of the preposition and a metaphorically motivated extended sense (Table 1). In the semantic priming task, participants saw a prime of a diagram embedded with a trajector word and judged the acceptability of a PP (Figure 1). Related and unrelated primes share the same trajector word but with different diagrams. Response times (RTs) of PP judgments were analysed using linear mixed-effects models with controlled covariates (L2 proficiency, frequency and event plausibility).

Results showed fixed effects of L2 proficiency, preposition and sense. Faster RTs were observed when L2 learners' English proficiency was higher. RTs for judging *over* phrases were longer than *in* phrases and RTs for judging extended senses were longer than spatial senses. Post-hoc analyses of the relatedness × preposition interaction showed interference effects of *over* diagrams on processing *over* phrases but no effect on processing *in* phrases (Figure 2). The relatedness × SOA interaction showed interference effects of diagrams on L2 phrasal judgement under 2040-millisecond but not 1040-millisecond SOA (Figure 3). No interaction was found between relatedness and sense. The interference effects on processing *over* phrases could be attributed to the mutual inhibition of diagram and language processing due to the simultaneous recruitment of the same perceptual neurons (Wheeler & Stojanovic 2006). Compared with the *in* diagram, the *over* diagram was more abstract and might yield more than one interpretation by L2 learners, such as *above* and *on*. The results indicated L2 mental simulation tended to be executed when SOA was relatively longer since it took time for schematic diagrams to be processed and comprehended. The findings suggested that L2 mental simulation effects were modulated by prepositions and SOA, and supported the psychological reality of schematic diagrams in L2 learners' processing of English prepositional phrases.

Table 1: Sample Stimuli of the Semantic Priming Task

Prep	Diagram	Sense (Based on Tyler & Evans 2003)		Prime word	Target phrase
over		Spatial	A TR is higher than the LM	*sun*	*over the horizon*
		Extended	A TR is more than the LM	*score*	*over a hundred*
in		Spatial	A TR is located within the LM	*knife*	*in the drawer*
		Extended	A TR experiences a state of the LM	*animal*	*in great danger*

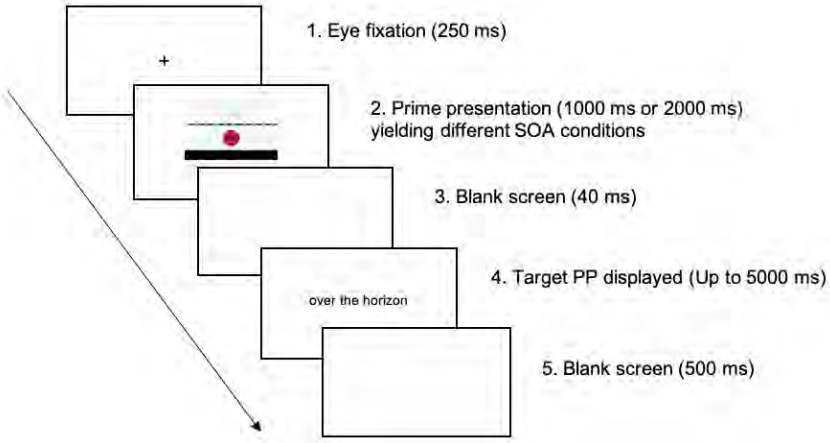

Figure 1: A Sample Trial of the Semantic Priming Task

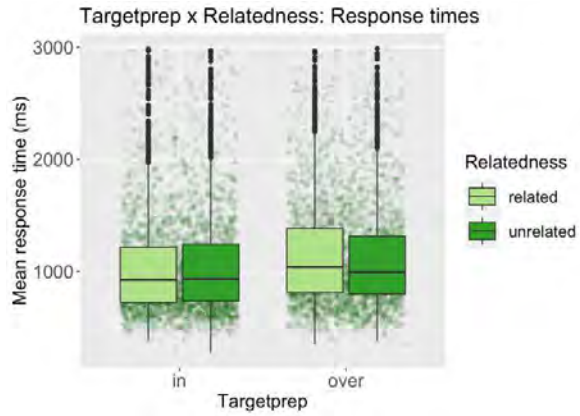

Figure 2: Response Times of Related and Unrelated Trials by Preposition

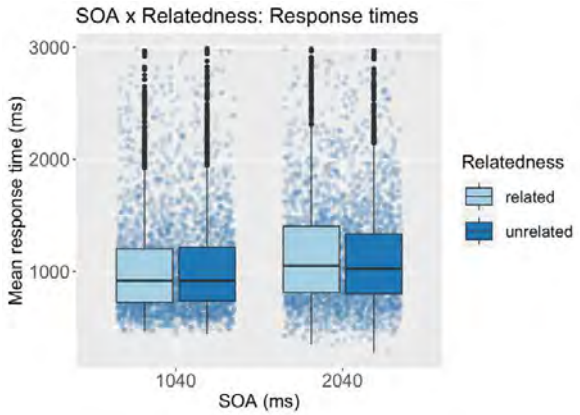

Figure 3: Response Times of Related and Unrelated Trials by SOA

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"*At* work *at* university": a cognitive semantic study of the polysemy of the preposition *at*

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Keywords: cognitive semantics, preposition, corpus, semantic network, image schema

The aim of this paper is to examine the polysemy of the preposition *at* as part of a larger project investigating and comparing a range of English prepositions within a cognitive linguistics framework. Using corpus data, the distinct yet related senses of *at* are determined and this polysemy is modelled with image schemas and semantic networks.

While there is extensive research on the polysemy of prepositions (e.g. Hanazaki, 2005 for *by*; Tyler & Evans, 2003 for *over*), many studies based their analyses on fabricated examples (e.g. Tyler & Evans, 2003; Lakoff, 1987). Moreover, studies have been criticised for relying solely on the researchers' introspective judgments and thus for lacking a methodology for determining and distinguishing senses of a preposition (Sandra & Rice, 1995). Tyler and Evans' (2003) principled polysemy approach to *over* was the first to propose a set of methodological criteria for determining an established sense and the central sense of a preposition.

The present study aims to counter the two aforementioned pieces of criticism by drawing on natural corpus data instead of fabricated examples, and by applying methodological criteria for determining and distinguishing senses. In relation to the first point, the data was gathered from a range of corpora, including a legal corpus (EuroParl) and four novels from different genres (thriller, romance/drama, dystopia/fantasy, and philosophical novels). The data is thus representative of a range of topic areas, which should ideally mirror as many of the different nuances of meaning manifested in the preposition's senses as possible and therefore increase the naturalness of the data.

Concerning the second point of criticism relating to the methodology employed for determining and distinguishing senses, Tyler and Evans' (2003) two criteria state that an established sense has to express a distinct nuance of meaning (e.g. a distinct spatial configuration) from the other, already existing senses, and has to do so independent of context. These two criteria are adopted in the present study but specified with ideas from Cruse's (2000) account of how different types of contexts can influence word meaning and where the line between a conventionalised sense and contextual influences should be drawn.

The analysis of the corpus data and the application of the two methodological criteria resulted in the identification of six distinct yet related senses of *at,* which are of spatial, temporal, and abstract nature. This can be exemplified by a position in (1), where the trajector is construed as occupying a position near to or within the bounds of the landmark. Related to the point-like spatial sense in (1), *at* can also depict a point in time as in (2), and a state as in (3). The other three senses of *at* express aim, manner, and a point on a scale.

1) (…) the swing door *at* the back. (Smith, 27)
2) He and Daddy watched something on the news *at* lunchtime. (Moyes, 9)
3) He was holding a notebook *at* the ready (Cole, 19)

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The relationship between English words rated as 'iconic' and (iconic) gesture.

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Keywords: iconicity, gesture, ideophones, sensory linguistics, depiction

Despite the long-held assumption that language is arbitrary, recent research has shown that iconicity, the resemblance between word forms and their meanings, is a core feature of both signed and spoken languages (Perniss, Thompson & Vigliocco, 2010; Dingemanse et al., 2015). Iconicity can often be found in ideophones, a class of words that use depiction to convey sensory meaning, which exist in many languages (Kita, 1997; Voeltz & Kilian-Hatz, 2001; Dingemanse, 2012). Research has established an association between ideophones and gesture in various languages (Diffloth, 1972; Kita, 1997; Dingemanse, 2013). Although it has been argued that English lacks a distinct lexical class of ideophones (Diffloth, 1972; Liberman, 1975; Nuckolls, 2004), iconicity rating studies have shown that it nonetheless contains a substantial number of words that native speakers rate as 'iconic', i.e. as "sounding like what it means" (Winter et al., 2022).

The current study is an expansion of a pilot study using approximately 1,370 video clips from the TV News Archive, a captioned video database of news broadcasts, where speakers used words rated highly in iconicity. The results of the pilot study suggested that such English iconic words are, like ideophones, associated with high gesture rates. The present study compares the gesture rate of verbs and adjectives rated as highly iconic (e.g. swoosh, puffy, crispy), and minimally iconic (e.g. ordain, rejoin, grateful) from Winter et al. (2022). Clips of these words from the TV News Archive are being coded for whether a gesture co-occurred with the word, and whether the gesture itself could be interpreted as iconic, using Kendon's (2004) categories of representational gestures: depiction, modelling, and enactment. For example, when using the iconic word squish, some speakers also produce an iconic gesture by enacting squishing something between two open hands by moving their palms towards each other. Coding of non-iconic words is ongoing, but the aim is to produce a final dataset of approximately 4,000 words.

Like the pilot study, the present results for iconic words show they have a high overall gesture rate at 71%, 30% of which are iconic. Preliminary results for non-iconic words suggest that they have a lower gesture rate, and that fewer of the gestures which co-occur with non-iconic words are iconic. Participant modality ratings from Lynott et al. (2020) allow for comparison across the senses, to determine whether some are more highly associated with gesture. For iconic words, touch attracts the most gesture (80% gesture rate, 51% of which are iconic), followed by sight (75% gesture rate, 23% of which are iconic), and sound (64% gesture rate, 40% of which are iconic). I will also consider what the results mean for the assertion that English does not have ideophones, particularly in reference to Dingemanse's (2019) typology of ideophones, arguing that these highly iconic English words have a similar association with gesture.

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Future Conceptualizations in English Speech and Co-Speech Hand Gesture: Direction and Orientation

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Keywords: time conceptualization, co-speech hand gesture, data-driven analysis

Studies have reported that for English, a time-line is conceptualised gesturally along the sagittal and lateral axes, with hand gestures forward and to the right marking future, and backwards and leftwards gestures marking the past (see overviews in Núñez and Cooperrider 2013; Cooperrider et al. 2014). I challenge this traditional scholarship by arguing that these oppositions are not absolute and any outward-directed gesture can potentially conceptualise future on a time-line.

As first step I researched depictions of the future, engaging empirically in data-driven analysis of 47 snippets, each 20 seconds long, from RT's English-language show SophieCo Visionaries (2020). Those were selected based on corpus searches for 'will' + hands visible' and subsequent manual annotation in the Rapid Annotator –software designed by Uhrig[1] - and in ELAN[2]. Two coders annotated all data for speech and gestural units marking future. Seven categories of speech units which mark future contextually were identified in the video data analysed:

1) The verb 'will', including 'will' with or without negation, e.g. 'will', 'will never', in a full form, or reduced, e.g. ''ll' or 'won't';
2) Conditional or 'when' clauses and counterfactuals, including clauses introduced by conjunctions 'once', 'if', 'whether', 'would', and 'when'. E.g. 'Would you looking back at this pandemic see something that will transform the humanity?' or '[…] yeah we will probably beat it at the end of a summer but come autumn and the temperatures drop we are going to be bracing the second wave'
3) Modal verbs, e.g. in 'you're saying it should change and it won't be growing steadily anymore.'
4) Time expressions, including future expression, e.g. 'in the future', and expressions and adverbs making future in the context, e.g. sooner rather than later, eventually, anymore.
5) Verbs in the present tense with future references, e.g. 'we are going to be bracing the second wave'.
6) Lexical units with a future semantic component, e.g. change, leap, threat, futurist, predict.
7) Lexical units which acquire a future reference in the context, e.g. 'architect' acquires a future semantic component in the context through being labelled as 'futurist' as discourse unfolds.

Speech units co-occurred with hand gestures, 139 of which were analysed. Gestures forward, to the right, to the left, downwards, and hands spread were viewed as potentially marking future (cf. Valenzuela et al. 2020). In order to verify whether those gestures mark future I performed comparative analysis of future and past depictions. To make analysis manageable, I focused on 'will' + infinitive for future speech markers and verbs in the present perfect and past tenses. I compared future (47 snippets) and past depictions[3] (50 snippets) by analysing verbs with the same core semantics. My analysis revealed a gestural feature discriminating between future and past conceptualisations. This allowed for a new interpretation of time conceptualisation in hand co-speech gesture and shed some light on understanding hand gesture more broadly.

A dataset composed of video snippets for future and past depictions, which was annotated for respective speech units and gesture, will be made available with this paper once it is published.

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[3] Past depictions were selected through searches in the SophieCo corpus and NewsScape dataset. http://newsscape.library.ucla.edu

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A study of Individual Differences in L1 Grammatical Comprehension of Complex syntax

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Keywords: language analytic ability, print exposure, implicit learning, L1 acquisition, complex syntax

The traditional assumption in generative linguistics is that all native speakers converge on (more or less) the same grammar, which is a key argument in favor of the universal grammar (UG) hypothesis. However, in usage-based linguistics, it is not assumed that all speakers achieve the same outcomes in their language learning. Instead, individual differences in (a) experience and (b) abilities are expected to have an effect on language learning outcomes.

We present a study that explores the potential effects of various factors on grammatical comprehension in adult native speakers. In order to account for the individual differences in experience, we measured print exposure (since the written input is syntactically more complex than the spoken input). In order to account for the individual differences in abilities, we measure implicit and explicit memory for sequences, (non-verbal) working memory, and language analytic ability (a measure of metalinguistic awareness). In addition, our study included two additional measures which are intended as control conditions: sustained attention (which assess participants' ability to stay focused on a task) and mental calculation (a secondary measure used in our working memory task that we expect to be unrelated to grammatical understanding).

We recruited 79 UK native speakers of English for this study. We measured grammatical comprehension via a force-choice task in which participants read sentences that contained structures relatively complex from the syntactic point of view, such as (2). They were then asked to answer comprehension questions, such as (2a-c).

(2) Linda complained that the fact that cycling in the main square is forbidden annoys tourists.
a. What did Linda complain about? (That tourists are annoyed. / That cycling is forbidden in the main square.)
b. What is forbidden? (Complaining about the cycling restrictions. / Cycling on the main square.)
c. What annoys the tourists? (That one is not allowed to cycle in the main square. / That Linda complained about cycling restrictions.)

Mixed-effects models show that three individual variables account significantly for the participant's results on grammatical comprehension: language analytic ability, print exposure and implicit learning. Language analytic ability and print exposure had large effects on grammatical comprehension, while implicit learning had a much smaller effect. These results suggest that there may be more individual differences in native language grammatical proficiency than previously believed. The existence of these individual differences in grammatical knowledge has important theoretical and methodological implications for language research.

These results, and those of other studies, demonstrate the existence of substantial individual differences, undermining the convergence argument for UG. Additionally, the findings challenge another widely-held assumption, namely the claim that the acquisition and processing of L1 grammar rely (almost) entirely on implicit learning. The study suggests that conscious controlled processes (i.e., language analytic ability) also play a role, at least when it comes to relatively complex structures. Furthermore, the study indicates that print exposure is also a strong predictor of grammatical comprehension. This effect can be due to increased exposure to complex syntax in more literate participants, to the processing advantages that the written medium offers to highly skilled readers, or to more indirect effects of literacy such as metalinguistic awareness. These findings have important implications for our understanding of language acquisition, representation, and processing.

More is better: Language statistics reveal a bias towards addition

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Keywords: numerical cognition, corpus analysis, word frequency, distributional semantics

One of the core tenets of cognitive linguistics is that language is not a separate cognitive system, but connected to domain-general cognitive processes (e.g., Bybee & McClelland 2005). Language statistics in particular have been shown to reflect embodied relations, e.g., Louwerse (2008) shows that spatial iconicity is reflected in ordering preferences for binomial expressions, with pairs such as attic and basemenet being more frequent than the reverse, basement and attic. Similarly, word frequency statistics show that the English language is biased towards vision, in line with the Western cultural bias towards this sensory modality (Winter, Perlman & Majid 2018).

Here, we investigate how language statistics reveal a recently uncovered bias: people's tendency to neglect subtractive solutions to problems (Adams et al., 2021). For example, when tasked to "improve" a sandwich recipe, people will tend to add rather than subtract ingredients, and when tasked to review papers, reviewers will tend to make additive rather than subtractive suggestions.

This paper demonstrates that the English language shows this addition bias across numerous levels of linguistic analysis. We first use the Corpus of Contemporary American English to show that words diagnostic of addition or the concept of 'more' (add, addition, plus, more, …) are more frequent than their subtractive counterparts (subtract, subtraction, minus, less, …). For our statistical analysis, we fitted a Bayesian negative binomial regression model (Winter & Bürkner 2021) with the fixed effect type (add vs. subtract) and random effects for word, register, and text file, including random slopes. In a second analysis, we use the same statistical modelling approach to show that English binomial expressions reveal addition bias in their ordering preferences, e.g., add and subtract is more frequent than subtract and add etc. Finally, we show that addition-related words are also more positive in terms of their connotation, as established via corpus-based contextual valence (Snefjella & Kuperman 2016).

Finally, we use distributional semantic word vectors (word2vec, Mikolov et al. 2013) to show that synonyms of to change and to improve (as determined via thesaurus.com) are closer in semantic space to addition-related concepts. This analysis shows that the behavioral profile of words like to transform, to remodel, or to alter is similar to words such as to add and to increase. We then use a state-of-the art language model, GPT-3, to demonstrate that in contexts such as I suggest we change this by adding/removing, adding has a higher contextual probability than removing for all verbs of change we consider (linear mixed model fitted on log probabilities with random effect for word). Altogether, our results point to an addition bias being deeply rooted in language, including word frequency, word order preferences, emotional connotation, and the usage-based semantics of verbs of change in the lexicon. Our analyses also make a methodological contribution, showing how readily available rating datasets and off-the-shelf word vectors can aid in cognitive linguistic research, specifically with respect to research that looks at how language use relates to cognition more widely.

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Simplex-LVC pairs with experiencer objects in German: How causativity can 'transfer us into excitement'

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Keywords: experiencer predicates, light verb constructions, causation, corpus study

German light verb constructions (LVCs) are said to have corresponding simplex verbs (SVs), e.g. *zur Aufführung bringen*, lit. 'bring to performance' vs. *aufführen* 'perform' (e.g. Polenz, 2008). However, it is under discussion whether LVCs and their corresponding simplex verbs are synonyms (e.g. Glatz, 2006; Polenz, 2008), which leads to the question: Why should German have two different syntactic types of predicates that denote the very same event?

We address this question in an intensively discussed lexical domain: Object-experiencer predicates such as *frighten* or *worry* are known to show several peculiarities at the syntax-semantics interface since the study of Belletti & Rizzi (1988). It is under debate to what extent object-experiencer verbs can be classified as agentive or causative; it seems that some of them frequently occur with human, and thus potentially agentive, subjects, while others strongly prefer situations as subjects, and that there are no clear-cut causativity distinctions.

German features several patterns of object-experiencer LVCs, of which the pattern *in N versetzen* (lit. ‚transfer into N') is particularly productive. It works with numerous nouns denoting emotions, many of which are derived from object-experiencer SVs. We argue that there is a systematic difference in usage and meaning between object-experiencer SVs and corresponding LVCs. It can be accounted for by assuming that the LVC constitutes causative marking, which alternates with the SV as unmarked counterparts.

Our argumentation is based on a corpus study, in which ten pairs of *in N versetzen* object-experiencer LVCs and corresponding SVs were investigated in the corpus DeReKo (Leibniz-IDS, 2021). The database consists of 100 randomly collected and manually analyzed sentences for each SV and LVC. We annotated the syntactic and semantic type of the arguments of the predicates, presence and type of modification, coordination, aspectual properties, and the voice construction. Out of ten annotation parameters, the semantic type of the non-experiencer argument (values: animate; concrete; abstract; event; state; 0) turned out to be the most influential.

The quantitative analysis of our annotation results shows that differences between the LVC and SV patterns are visible in both subject and object type frequencies. We present a logistic mixed-effects model, predicting the choice of SV vs. LVC by the semantic annotation parameters, influenced by the random effects of lexical stem and syntactic types of the arguments. The model explains the observations that collective object NPs favour LVCs (1), while generic object NPs favour SVs (2), and that animate subjects strongly prefer LVCs (1), while eventualities prefer SVs.

(1) *Der österreichische Saxophonist [...] versetzt das Publikum in Begeisterung*.
the austrian saxophonist transfers the audience in enthusiasm
'The Austrian saxophonist fills the audience with enthusiasm.'
(A07/OKT.08550)

(2) *Andere Fahrzeuge [...] begeistern [...] sportliche Lenker mit dem*, *was* sie *[...] zu bieten haben*.
other vehicles thrill racy drivers with that what they to offer have
'Other vehicles delight racy drivers with the features they offer.'
(A97/JUN.07770)

Based on the quantitative analysis and semantic tests on qualitative data, we classify the choice of the LVC over the corresponding SV as marking of causative semantics. We show why the LVC should be considered the marked alternation counterpart, and that it entails culminating causation of an emotion regardless of properties of its arguments, while non-causative readings and non-culminating causation readings are available for SVs.

Our study addresses the much-disputed question about the nature of German LVC-SV pairs, connects an empirical, quantitative study with a question of theoretical value, and contributes to the debate about the semantics of object-experiencer predicates.

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Title.
Effects of lexical neighbourhood density and phonotactic probability studied with a new database of matched pairs of real signs and modelled pseudosigns in the Swedish Sign Language

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Keywords: Sign language, Lexical database, Pseudosign generation, Language processing, Lexical access, Neighbourhood density, Phonotactic probability, Lexical decision task

The combined effects that the presence of competing lexical neighbours and the typicality of phonotactic patterns have on the accuracy and speed of which the human brain accesses items in its mental lexicon have been studied for spoken languages for well over twenty years. Typically, for items in dense phonological neighbourhoods lexical access is slower and less accurate than for items in sparse neighbourhoods, and items with highly probable phonotactic patterns are easier and faster to perceive. Phonotactic probability (PP) and neighbourhood density (ND) thus forms two fundamental processes in human word recognition (Vitevitch & Luce, 2016). In comparison, sign language phonotactics allows for more ways in which phonological features may be combined – both simultaneously and sequentially – than what is possible in spoken language. Consequently, the roles that ND and PP play in lexical access and related processes, such as learning new lexical items, may partly differ between spoken and signed languages. Only a few studies have investigated such effects in sign languages (Cf. Williams, Stone & Newman, 2017; Caselli, Emmorey & Cohen-Goldberg, 2021).

To investigate the effects of PP and ND on lexical access, we created a database of signs and pseudosigns for use in a lexical decision task (LDT). Real signs were drawn from the Swedish Sign Language Dictionary (https://teckensprakslexikon.su.se), which contains over twenty thousand phonologically transcribed signs in the Swedish Sign Language (Svenskt Teckenspråk; STS). Based on these transcriptions and frequency data from the STS-korpus (Öqvist, Riemer Kankkonen & Mesch, 2020), metrics of neighbourhood density (ISD20, mean distance to the 20 closest neighbours) and phonotactic probability (CPP, the probability of the combination of different sign features in a given sign) were devised. Pseudosigns were created by weighted sampling from sign features based on such probabilities. 400 real signs and 400 pseudosigns were closely matched into pairs with similar values of ISD20 and CPP (see figure 1), video recorded, and then presented in an LDT.

Accuracy results were analysed with logistic regression, modelling the probability of responding “real sign”, given ISD20, CPP, and their respective interactions with sign type (see figure 2). Preliminary results from a single fluent L2 signer indicate that, a) the accuracy in identifying real signs is independent of ND. Higher ND, however, increases the risk of mistaking a pseudosign for a real sign. b) High PP increases the chance of correctly identifying real signs. The accuracy in identifying pseudosigns, however, seems to be independent of PP. In the final presentation, both response time and accuracy analyses will be included, based on LDT results from L1 signers of STS.

Our preliminary results indicate that PP shows a clear facilitatory effect upon lexical access. However, in contrast to the results of Caselli et al. (2021), we see no evidence of lexical competition among real signs. This suggests that sign languages suffer less from lexical competition, and possibly that mental representations of signs are more distinct than for words. This ongoing study will deepen the understanding in this area.

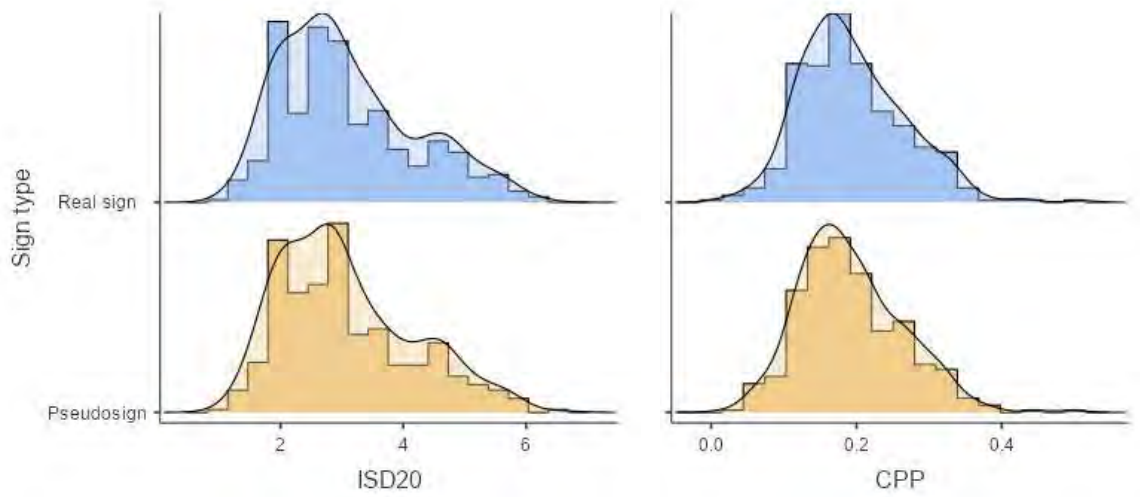

Fig. 1: Histograms and density plots showing the distributions of the neighbourhood density metric ISD20 and the phonotactic probability metric CPP for the real signs compared to the pseudosigns used in the current study. Note that low ISD20 values indicate high neighbourhood density.

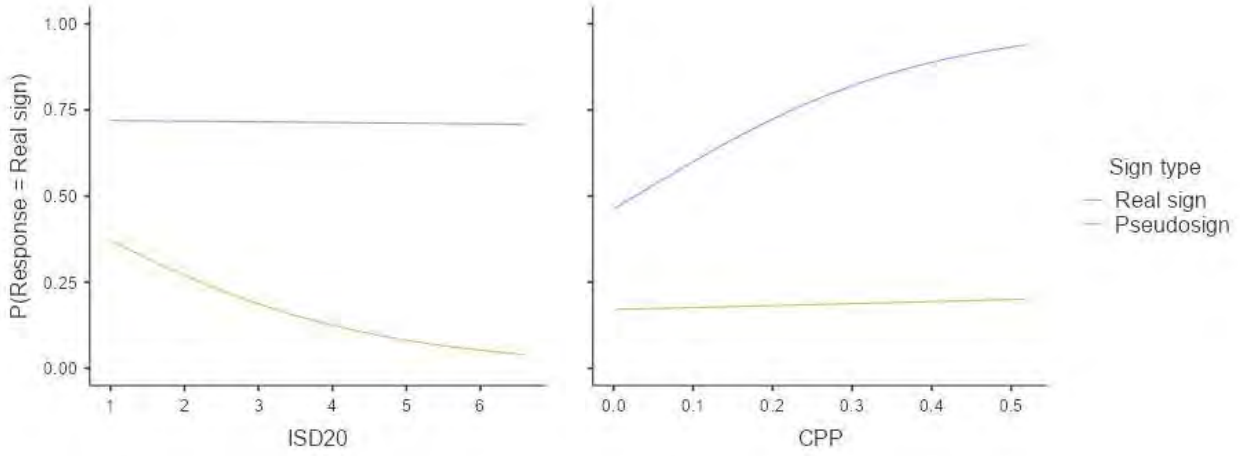

Fig. 2: Marginal means for the probability of responding "real sign" in the lexical decision task given the presented sign type and the neighbourhood density metric ISD20 (left plot) and the phonotactic probability metric CPP (right plot). Note that low ISD20 values indicate high neighbourhood density.

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Cross-linguistic variation in descriptions of human faces

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Keywords: Lexico-semantic typology, Facial descriptors, Dynamic facial characteristics, Facial expressions of emotion, Maniq

Human faces are notoriously difficult to describe. As such, they have long been considered an ineffable domain, in particular in terms of naming facial recognition features (Levinson & Majid 2014). The apparent verbal limitation in describing faces seems to be linked to the fact humans process faces to access identities and this relies strongly on holistic processing (i.e., processing of configurations of features). Describing aspects of faces, in turn, relies more on featural processing (i.e., processing of individual features) (cf. Levinson & Majid 2014). In fact, verbal descriptions of faces have been shown to impair facial recognition, suggesting that language can have a detrimental effect on perception (Dodson et al., 1997). Despite the large body of work in psychology feeding into hypotheses on why faces might be difficult to verbalize, there is little systematic work in linguistics trying to establish how speakers of different languages actually describe faces and whether facial descriptions differ across languages in meaningful ways. In fact, this domain has been explicitly singled out as "neglected" in semantic typology research (Evans 2011), despite its potentially high significance for semantic theory and our understanding of the limits of language.

Here, we present research in which we compare descriptions of a set of standardized facial stimuli focusing primarily on dynamic facial characteristics. We concentrate on two typologically diverse languages: Maniq (Austroasiatic) and Polish (Indo-European) reporting results of two labelling tasks: one targeting single features ("action units") and second configurations of features (emotional expressions). While two languages are not sufficient to make typological generalizations, this is a first systematic cross-linguistic comparison in this domain. Maniq and Polish provide a good basis for comparison because they are unrelated, spoken in different areas, and have markedly different lexical profiles: with Polish showing a tendency towards compositional encoding and distributing meaning across different word classes, and Maniq displaying a more holistic encoding and being more "verby" (Wnuk 2016).

Our initial analysis shows Maniq possesses highly semantically specific vocabulary expressing facial actions in monomorphemic verbs, e.g., *citũn* 'to raise upper lip', whereas Polish frequently employs multi-morphemic phrases, e.g., *podnieść górną wargę* 'to raise upper lip' (raise upper lip). At the same time, Polish exhibits richer and more specific vocabulary of configurational descriptors referring to emotion, e.g., *zażenowanie* 'embarassment', *wstyd* 'shame', compared to Maniq, where such descriptors are less specific and less numerous, e.g., *ʔiyay* 'to be unhappy, upset, irritated'. Further analysis reveals cross-linguistic differences in participant naming agreement of single features vs. configurations, suggesting different lexical specialization is accompanied by different conveyability. We present our findings placing them in the broader context of human facial cognition and discuss the implications of this work for lexico-semantic typology.

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How numerical communication reflects cognition: A corpus-based analysis

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Keywords: number frequencies, prototype theory, big data, corpus linguistics, vague language

Numbers are typically characterised as precise and objective. At least at first sight, mathematics is an area of knowledge where classical theories of categorization in terms of necessary and sufficient conditions might still apply, given that there seem to be hard and clearly definable boundaries between different mathematical categories, like integers and decimals (but see Armstrong, Gleitman & Gleitman 1983). However, in this paper, we show that the way people use numbers is vague and subjective. Using Bayesian models, we analyse over 1.7 million occurrences of numbers between 0 and a billion in the 100 million word British National Corpus (BNC Consortium 2007). We find that, rather than numbers exactly quantifying mathematical properties of the world around us, certain numbers are used more frequently than others based on their magnitude and roundness, which may reflect our cognitive processing and representation of these numbers.

First, we replicate the finding that smaller numbers are used more frequently than larger numbers (Dehaene & Mehler 1992; Dorogovtsev, Mendes & Oliveira 2005). This pattern is believed to reflect the fact that our 'mental number line' is logarithmically scaled (Dehaene 1992), and that smaller numbers are easier to mentally process (Dehaene & Mehler 1992). Second, in a model that controls for this small number bias, we show that round numbers are overrepresented. Like small numbers, round numbers are psychologically salient (Van der Henst & Sperber 2004) and more cognitively accessible (Cummins 2015: 32). Third, we find that word frequency distributions reflect the fact that people generally round larger numbers to a greater extent than smaller numbers – for example, rounding 86 up to 90 (the nearest multiple of ten) but rounding 186 up to 200 (the nearest multiple of 100). This finding aligns with the idea that higher numbers have more approximate and fuzzy mental representations than smaller numbers (DeWind et al. 2015; Shepard, Kilpatric & Cunningham 1975). Fourth, we show that round numbers are not created equal, and that 'roundness' can hence be productively viewed as a prototype category with graded membership (see Rosch 1973). Specifically, 10-ness (10, 20, 30, ... 100, 200, 300, ...), 2-ness (20, 40, 60, ... 200, 400, 600, ...), 2.5-ness (25, 50, 75, ... 250, 500, 750, ...), and 5-ness (50, 100, 150, ... 500, 1000, 1500 ...) are features of roundness (Jansen & Pollmann 2001), and numbers with more of these roundness properties are 'rounder' than others (e.g., 100 versus 25), which increases their frequency in the BNC.

Altogether, our results demonstrate that language use about numerical information broadly seems to mimic the way people think about numbers, suggesting deep links between numerical cognition and communication that bear an imprint on word frequency statistics observed in corpora.

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The role of print exposure and language aptitude in adolescent writing complexity and receptive grammar

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Keywords: grammatical complexity; language aptitude; print exposure; lexical richness

According to usage-based models, children learn language from the input available to them using general cognitive mechanisms. This paper investigated the role of a particular type of input (printed texts) and a particular type of cognitive mechanism (grammatical sensitivity) on the development of grammar and writing complexity in English-speaking adolescents. The focus of the study was on language in the written modality and, given the large influence that exposure to written language i.e. print exposure has on lexical development (Mol & Bus 2011), spelling (Sparks et al. 2012), and the acquisition of complex syntax, it was one of two main predictor variables. Written language contains a higher proportion of lexically richer and syntactically more complex language than is found in spoken language (Biber 1986; Cameron-Faulkner & Noble 2013; Cunningham & Stanovich 1998) and this exposure aids in the comprehension of these complex structures (Just & Carpenter 1992). Print exposure has also been found to be a source of variation in grammatical abilities (Dąbrowska 2018; Street & Dąbrowska 2010).

The second predictor of grammar and complex structures in our study was grammatical sensitivity, an aspect of language aptitude. The role of aptitude as a strong predictor of foreign language acquisition has been firmly established since the 1950s (Li 2015). More recently and in contrast to the initial assumptions that aptitude plays no role in native language acquisition, it has been found to relate more strongly to grammatical proficiency in the native language than in the second language in adults (Dąbrowska 2018; Llompart & Dąbrowska (in press); Wickel & Dąbrowska (under review)). These findings raise the question of whether a similar relationship would be found in adolescents who are still in the middle stages of language development and in the process of becoming proficient writers.

89 English-speaking 11-13-year-olds participated in our experiment. They completed a grammatical sensitivity test of language aptitude and an author recognition test to measure print exposure. Our outcome variables were receptive grammar and the lexical richness and grammatical complexity of two writing samples. Participants wrote a personal narrative and a passage designed to elicit complex writing structures. The writing samples were transcribed and imported to INCEpTION (Klie et al. 2018) for annotation. In order to extract the measures of lexical richness and grammatical complexity that formed our outcome measures, we annotated for T-units, subordinate clauses, noun phrases, and spelling errors. We ran correlational and inferential analyses to determine the role of print exposure and aptitude in receptive grammar and writing complexity.

The results revealed that aptitude was an important predictor not only of receptive grammar, but also for the production of lexically rich and grammatically complex written language. We found that print exposure was also a significant predictor of expressive lexical richness. The interaction between aptitude and print exposure revealed a superadditive effect that demonstrates the importance of high-quality exposure to written language, as is found in books, for the development of grammatically complex writing, regardless of the aptitude of the individual.

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The time orientation of *qian* 'front' and *hou* 'back' in Chinese: A Corpus-based Behavioral Profile Analysis

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Keywords: time orientation, metaphor, constructional profile, corpus-based, Chinese

The Chinese spatial terms *qian* 'front' and *hou* 'back' can be used to indicate the past as well as the future. Previous studies have provided many accounts of their contradictory usage, but very few corpus-based studies have been conducted to examine their usage in authentic data. Based on the corpus data and adopting a behavioral profile approach (Gries and Divjak 2009; Gries 2010), this study examines their time orientation in actual usage. The following three questions were addressed: (1) What is the time orientation of *qian* and *hou* in Chinese? (2) Is the time orientation of *qian* and *hou* correlated with the constructions in which they occur? If so, how are they correlated? (3) What are the motivations underlying the time orientation of *qian* and *hou* in actual usage?

The corpus analysis yields the following findings. First, the primary temporal meaning of *qian* and *hou* is indicating time sequence, with *qian* meaning 'earlier' and *hou* meaning 'later'. Second, Chinese speakers tend to conceptualize the future as being ahead of them and the past behind them. Their contradictory usage of *qian* and *hou* arises from the lack of a distinction between Ego-Reference-Point and Time-Reference-Point. Third, *qian* and *hou* are used mainly in five constructions as temporal words: *qian/hou*+X, X+qian/hou,prep+*qian/hou*+V(P), *qian/hou*, and fixed expressions. The constructional profiles reveal that their time orientation correlates with the constructions in which they occur. Based on the corpus results, this study also addresses the motivations underlying their time orientation in various constructions and argue that their time orientation stems from an interplay of temporal metaphors, the constructions in which they occur, and context.

Different from the previous qualitative and experimental studies, this corpus-based study demonstrates that Chinese speakers conceptualize the future as being ahead of them with the past behind them and construe the earlier times in front of the later times in the temporal sequence. It presents the first corpus evidence for Yu's (2012) view that the metaphorical orientation of time in Chinese is realized by the pair of conceptual metaphors FUTURE IS IN FRONT OF EGO and PAST IS BEHIND EGO. Moreover, based on corpus data, this study shows that the Time-RP metaphor plays a more important role than the Ego-RP in the time orientation of *qian* and *hou.* In addition, by adopting a corpus-based behavioral profile approach, this study suggests that speakers' metaphorical representations of time are shaped by a multitude of factors rather than single space-to-time mappings.

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Construal and linguistic expression of caused-motion by Chinese adults: An empirical analysis

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Keywords: Caused-motion, Chinese adults, Construal, Linguistic expression

Theoretical background & research target – In the last forty years or so the domain of space has increasingly attracted researchers' attention in various disciplines including language typology, psycholinguistics, language acquisition, etc. Caused motion, a situation where an agent exerts some external forces on an object which causes its direct movement, is a complex type of motion and contains a number of semantic elements, including CAUSE (*take*, *carry*), PATH (*into*, *out of*), MANNER (*push*, *pull*), etc. (Talmy 1985). According to Goldberg (1995: Chap. 7), English caused-motion construction can be syntactically and semantically schematized as [SUBJ [V OBJ OBL]] and X CAUSES Y TO MOVE Z, respectively. Previous research on motion event lexicalization mostly focus on voluntary motion event, and only few studies (Choi & Bowerman 1991; Hendriks, Hickmann & Demagny 2008; Hickmann & Hendriks 2010; Ji et al. 2011) have explored caused-motion event. This study expands the sphere of research by investigating how Chinese adults construe and encode caused-motion in their mind and language, with regard to caused-motion at a coarse-grained and fine-grained level, viz. extended caused-motion and onset caused-motion correspondingly. The difference between extended and onset caused-motion (cf. Talmy 2000: Chap. 8) lies in the presence of simultaneity of the causing and the caused event in the former, and the absence in the latter.
Research questions – 1) How do Chinese adults express caused-motion event in Mandarin? 2) How do Chinese adults differentiate extended caused-motion and onset caused-motion in Mandarin?
Data & method – With 20 video stimuli (10 for each sub-type) and 50 participants (25 females and 25 males, all graduates from Beijing University of Technology), we collect 764 valid descriptions (413 for extended caused-motion and 351 for onset caused-motion) in total. On the one hand, we report the common syntactic structures that Chinese adults use to express caused-motion event, regardless of the difference between the two sub-types of caused-motion event. On the other, we compare the syntactic structures that characterize extended and onset caused-motion, and summarize the features.
Preliminary findings – An examination of the results suggests, firstly, in conceptualization, Chinese adults construe the semantics of causation in the video stimuli, and probe into the indispensable causal component (i.e., the causing and the caused event), followed by setting up the conceptual substrate and forming either single or coordinate causative sentences, both with low specificity. Secondly, with the overall referential frame (the causing event + the caused event), the temporal dimension construing mechanism drives subjects' attention toward the asymmetry of the two different time frames involved, following which linguistic representations fill in, elaborate, and add conceptual details, thus providing high specificity (e.g., 她吹走了羽毛 lit. 'She blew away the feathers' vs. 她用力地吹了一下羽毛，羽毛飞起来了 lit. 'She blew on the feather hard, and the feather flew up'). The transformational relationship between the two concepts can yield a hierarchical model of causation structuring, ranging from a general, simple pattern to more elaborate and complicated patterns. This study is significant as it first reveals how caused-motion and its subtypes are construed and expressed by Chinese adults.

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Toward an identification procedure for verbal and pictorial metonymy

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Keywords: Motivation & Sedimentation Model, Contiguity, Part-whole relations, Sign use, Semiotic systems

Aiming for higher degrees of empirical validity metaphor scholars have developed several procedures for identifying metaphors in verbal text, such as MIP (Pragglejaz Group 2007) and MIPVU (Steen et al. 2010), as well as in pictures, such VisMip (Šorm and Steen 2018), and in verbo-pictorial representations such as street art (Stampoulidis et al. 2019). While metonymy has gained much interest in the past decades, there has been much less effort to provide corresponding identification procedures for it, especially when moving beyond the semiotic system of language. Perez-Sobrino (2017) provides an extensive empirical analysis of "multimodal" metaphors and metonymies in advertising, but the criteria for identifying metonymies, and their combinations with metaphors ("metaphtonimies") are not always clear. In fact, an identification procedure for metonymy is badly needed, as the "conceptual turn" in the field had led what is in fact an inflation of the concept, as pointed out by Brdar-Szabó and Brdar (2022). For example, we need to set limits so as not to overextend metonymy to phenomena like mental associations (e.g., Christmas and childhood memories), enactive perception (e.g., tears and sadness), or inferences (e.g., a bachelor and his typical way of life).

Based on the classical analysis of metaphor and metonymy as (verbal or non-verbal) sign-use that is based, respectively, on the similarity and contiguity of meanings (Jakobson 1971) and Langacker's analogous claim that in metonymy "the entity that is normally designated by a metonymic expression serves as a reference point affording mental access to the desired target, i.e. the entity actually being referred to" (Langacker 1987: 385-386) we propose the following theoretical definition of the concept, in accordance with the Motivation & Sedimentation Model (Zlatev et al. 2021): An (a) act of sign use, (b) involving one or more semiotic systems (e.g., language, gesture, depiction), where (c) the intended meaning (d) is understood through another, more directly represented meaning, (e) which it does not resemble as it does in metaphor, but is rather related to it in a part-whole or contiguity-based relationship. We show how this definition can be operationalized into an identification procedure, which we apply to a sample of verbo-pictorial messages, identifying monosemiotic and polysemiotic (i.e., involving more than one semiotic system) metaphors and metonymies.

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How does inferential information expressed by nominal expressions serve to structure different English texts?

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Keywords: nominal expressions, inferential information, text type

Inference as a cognitive process of deriving information is important in discourse comprehension. It has been explored from multiple perspectives over the past decades, such as the inferential phase of comprehension (Wilson and Sperber 2012), the role of general knowledge (Graesser and Clark 1985) and global and local coherence in text (e.g. Halliday and Hasan 1976; Graesser and Kreuz 1993; Cain *et al.* 2001). In contrast, less attention has been paid to how much our inferential information represented by nominal expressions, such as *the driver* in *I got on a bus and the driver was drank* given by Prince (1981: 233), is activated in texts. This research aims to explore how Inferential information flows through nominal constructions in different texts. Specifically, this research will address the following questions:

(i) How is inferential information expressed by nominals distributed across texts of different genres?
(ii) What is the difference between texts of different genres in terms of type of inferrable information expressed by their nominals?
(iii) How is inferrable information expressed by varied linguistic forms of nominal expressions in texts of different genres?

This research adopts a multi-method approach by combining text analysis with corpus linguistic methodology together with Prince's (1981) classic model of information taxonomy. This model is used to classify inferential information (Inferrable in Prince's term) expressed by nominals in text. Nominal expressions in written texts of four genres selected from the Open American National Corpus (OANC), namely essay, government document, newspaper and travel guide, have been manually analyzed by using the MMAX2 Annotation Tool (Müller & Strube, 2006). The analytical results show different distributions and types of inferential information expressed by varied linguistic forms of nominal expressions across texts. This study contributes to a better understanding of how inferential information expressed by nominal expressions works in the context(s) of the texts themselves and provides some insight in applications related to language production and comprehension.

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Modulating attentional and pre-attentive visual processing through brief training on novel grammatical morphemes

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Keywords: Grammar learning, P300, Visual mismatch negativity, Event cognition

Can brief training on novel grammatical morphemes modulate visual processing of non-linguistic stimuli? If so, is this effect restricted to attentional visual processing, or can it also permeate pre-attentive visual processing? Here, an experimental group intentionally induced the function of two novel grammatical morphemes highlighting the familiar concept of (in)transitivity in sentential contexts; a control group performed the same intentional inductive task with the same sentences but with the novel labels used interchangeably. Subsequently, after overnight consolidation, both groups performed a grammaticality judgment test, in which only the experiment group showed an N400 to violations of the novel grammatical morphemes. Subsequently, both groups performed two visual oddball tasks with non-linguistic motion event stimuli that were disguised as a completely unrelated experiment being conducted for a colleague. In the first (attentional) oddball task, relative to the control group, the experimental group showed decreased attention to infrequent changes in the grammar-irrelevant dimension (shape) but not the grammar-relevant dimension (motion transitivity), as indexed by P300 amplitudes; in the second (pre-attentive) oddball task they showed enhanced pre-attentive responses to infrequent changes in motion transitivity but not shape, as indexed by N1/visual mismatch negativity amplitudes. Our findings show that up- or down-regulating attention to pre-existing concepts in sentence contexts through brief training on novel grammatical morphemes can modulate both attentional and pre-attentive visual processing. We argue that this effect of linguistic experience on non-verbal cognition is unconscious and automatic.

Eating we live by: EATING metaphors in Mandarin Chinese

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Keywords: *Chī* 'eating', EATING metaphors, mapping, systematicity

Eating activities are "sources for metaphorical ways of describing a great variety of events in English and other languages" (Newman, 1997: 213). *Chī* 'eating' plays a pivotal role in Chinese culture as echoed in the saying mín yǐ shí wéi tiān "Eating is everything for people". In Chinese, many expressions related to eating is metaphorically used to talk about aspects of LIFE and we call them "EATING metaphors". EATING metaphors are largely motivated by the primary metaphor LIFE IS AN EATING ACTIVITY. This paper focuses on three prominent elements of the EATING activity (i.e., living as "a process of eating", living as "a kind of food" and living as "a tool for eating or cooking") which give rise to the following metaphors: SOCIAL ACTIVITY IS A PROCESS OF EATING, MENTAL ACTIVITY IS A PROCESS OF EATING, SOCIAL ACTIVITY IS FOOD, MENTAL ACTIVITY IS TASTE OF FOOD, HUMANS ARE FOOD, SOCIAL ACTIVITY IS A TOOL FOR EATING/COOKING, and MENTAL ACTIVITY IS ATTRIBUTE OF TOOLS FOR EATING/COOKING. The mappings from the domain of EATING to the domain of LIFE are largely based on their similarities on the generic level. Using the apparatus of CLICS3, we find that the concept of EAT in Chinese can colexify DRINK, INTAKE, CHEW, LEARN, CONSIDER, UNDERSTAND, INVADE, POSSESS, DEPRIVE, ABSORB, COITUS, DEPEND, and CONSUME, and all cases of colexification can be accounted for by the LIFE IS AN EATING ACTIVITY metaphor. It is the experiential similarities between the LIFE and EATING activity that make the structural mappings between two domains possible and that people can use one domain of experience to talk about another.

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The semantic space for adjectives

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Keywords: adjective, typology, neighbournet analysis

The adjective is a heterogeneous category and displays a great cross-linguistic variation. This study attempts to identify the semantic space of adjectives using Neighbor-net Analysis (Bryant & Moulton, 2004) based on a systematic large-scale typological study. More specifically, this paper focuses on the phenomenon of differential coding of adjectives, which is also known as "split adjectives" (Wetzer 1992, 1996, Stassen 1997) or "adjective classes" (Dixon 2004b). The differential coding phenomenon is typically shown by either structural coding (e.g. relativizer, copula) or inflectional potential (e.g. gender, case). For instance, in Jarawara *bit* 'small' occurs with a gender marker, but *botee* 'old' occurs without a gender marker, as illustrated in (1).

(1) Jarawara (Arawan, South America)

a. o-tati kone bit-**e**
1SG-head hair small-FEM
'my little head heairs' (Dixon, 2004a, 338)

b. jobe bit-**i**
house.MASC small-MASC
'small house' (Dixon, 2004a, 452)

c. Jara botee
Branco.MASC old
'the old Branco' (Dixon, 2004a, 338)

In particular, I have chosen 28 property concepts as semantic targets and investigated their morpho-syntactic behaviour in attributive and predicative functions by consulting grammatical descriptions and dictionaries. The sample consists of 80 geographically and genealogically diverse languages from all continents.

The result is presented in Figure 1, which shows the semantic space of adjectives. Interestingly, property concepts cluster into smaller groups on the Figure and these clusters to some extent coincide with the six traditional semantic types proposed by Dixon (1982): age, dimension, colour, value, physical property and human propensity. Furthermore, the six semantic types are different in their degree of internal coherence, represented by different shapes in the semantic space.

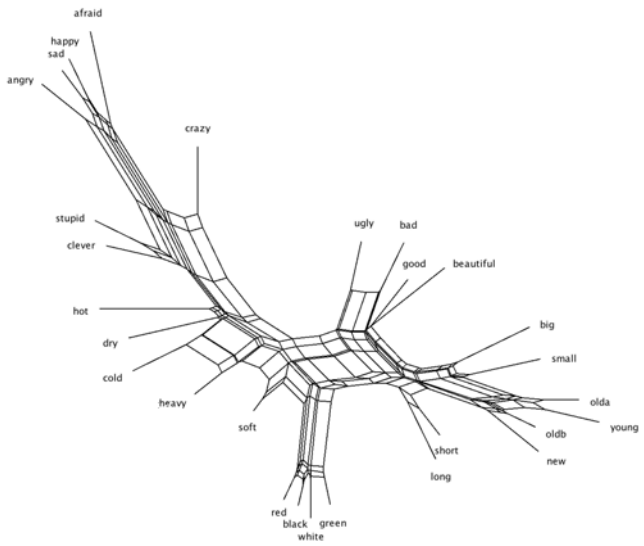

Fig. 1: The Neighbournet analysis of property concepts

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Semantic analysis of emotion-label synonyms: A corpus-based account of SYMPATHY, COMPASSION and EMPATHY

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Keywords: Emotion-label synonyms, Profile-based studies, Noun collocates, Sympathy

SYMPATHY, COMPASSION and EMPATHY are concepts frequently developed in the literature of pychotherapy, philosophy, sociology, ethics and religious studies. Linguistically, this synonymous set refer to emotions that involve intricate cognitive appraisal of and response to others' personal plight. However, linguistic variation in the conceptualization of the three emotion-label words have not been fully examined. Recent developments in cognitive linguistics-guided corpus research offer tools that help to explicate semantic structure of the three synonymous words and disambiguate their conceptual confusion.

Using the one-billion-word genre-balanced online Corpus of Contemporary American English(COCA) as data and applying a multifactorial usage-feature and profile-based methodology, this paper attempts to excavate semantic demarcation of SYMPATHY, COMPASSION, and EMPATHY by investigating primarily into their noun collocates and their role in establishing conceptual scenarios for the emotion lexicon. The study focuses on retrieving, annotating and categorizing semantic features of the noun collocates with complementary reading into the concordance lines that facilitate identification of conceptual salience.

The corpus-based Hierarchical Configural Frequency Analysis results based on the semantic features of their noun co-occurrences reveal distinctive socio-psychological scenarios. Namely, SYMPATHY conveys expressions of sorrow for community members in personal distress, which indicates a socializing response but a lesser degree of emotional engagement than COMPASSION and EMPATHY. COMPASSION co-occurs with words of virtue and indicates a moral benevolence and altruistic behavior to alleviate humanity from suffering. EMPATHY is frequently used in medical texts in recent decades as a cognitive ability to acknowledge, identify, and understand various human feelings. The findings suggest that nuanced conceptual structure of the emotion-label synonyms can be efficiently mapped on the basis of semantic analysis of the noun collocates as they reflect emotional arousal, emotional response, bodily sensation and spiritual engagement. The findings are also indicative of observing such linguistic features as prosodic polarities of the emotion lexicon.

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A socio-pragmatic critique of pragmatic failures in other-prefaces: Take the Chinese academic monograph as an example

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Keywords: preface, Chinese academic monograph, pragmatic failures, relevance degree

Preface, a special form of written style which we most Chinese understand as *Xu*, enjoys a history of more than two thousand years in China. Preface/*Xu* has found its way in *Wen Xuan* as an important independent style in the Southern Dynasty (AD 420-589). Preface is normally divided into 'self-preface' (SP, written by the author him/herself) and 'other-preface' (OP, written by someone else) in accordance with the preface writer. As a significant part of the book, the quality of the OP will directly affect readers' attitude towards the book. In recent years, the study of OP has been conducted from a certain linguistic perspective, and it is usually confined within discussion of generic structures and politeness phenomena in OP. However, its writing styles and contents, especially those in a Chinese academic monograph, are often ignored in previous studies, and some OPs help readers understand the book well while others seem to fail to do so. Based on Generic Structure Potential and Relevance Theory framework, this study examined the OPs in Chinese academic monographs, which identified thirteen generic elements. These were then divided into very relevant (e.g. the generic elements that are quite relevant to the content of the monograph: *book description* and *book features*), weakly relevant (e.g. the generic elements that are weakly relevant to the content of the monograph: *book author introduction* and *evaluation*), and irrelevant elements (e.g. the generic elements that are irrelevant to the content of the monograph: *self-abasement* and *research anticipation*) depending on the relevance degrees for reader understanding. Some pragmatic failures were found that could weaken OP functions and prevent readers from gaining an optimal understanding of the book. The causes of these pragmatic failures are also discussed.

Title: A multimodal investigation on metaphor productions of early adolescents: how 11-year-old Japanese children understand the concept of tax through postcard drawings

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Keywords: multimodality, visual metaphors, early adolescence, child development

This study aimed to investigate how Japanese children aged 11~12 years old (6th grade) comprehend complex concepts such as tax and taxation through postcard drawings using multimodal metaphor analysis. The postcards were gathered through a prefecture-wild competition organized by the Public Interest Incorporated Association (PIIA) in Akita, Japan. A total of 712 postcards were collected, containing text and drawings based on the children's understanding of tax and taxation.

According to different literature, individuals at the age of ten can be classified as either the end of middle childhood or the beginning of early adolescence. Therefore, this study focuses on the multimodal metaphors produced by Japanese children in their early adolescence. The participants of the competition were considered to have a relatively adequate ability to produce multimodal media and to understand and interpret complex concepts such as tax and taxation.

I checked interrater reliability for metaphor identification and conducted both quantitative and qualitative analyses of the data. I compared the identified metaphor units coded with variables related to their VEHICLE, TOPIC, and MODE. The relationships between these variables are explored using Chi-square Tests. I also examined the pictural-verbal consistency for understanding what constitutes coherent metaphor productions. The preliminary results suggest that the metaphor "TAX IS FOUNDATION" is most prominent in the text and drawings. Additionally, various semantic variations on the VEHICLE of "FOUNDATION" have been identified.

The implication of this study complements existing multimodal metaphor studies (Forceville, 2020; Yuan, 2023), by providing examples of real-life multimodal creations from Japanese children. It also demonstrates a great variety of metaphors in text and pictorials for the understanding of a complex topic such as tax. The result is in alignment with the recent child psychology research, which has shown a qualitatively marked increase in metaphor processing in eleven-year-old children compared to seven and nine-year-old (Willinger et al., 2019). Furthermore, when compared to adults' creation of online posters (Tay, 2017), the results offer valuable insights into the cognitive development of early adolescents in terms of metaphors and multimodality.

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Is language efficient or redundant? How language users distinguish the agent from the recipient in English and Dutch

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Keywords: Redundancy, corpus, efficiency, argument marking, robustness

Language is systemically redundant, meaning it often features several strategies to perform the same function (Van de Velde 2014). For instance, to form the past tense, Dutch may use ablaut, as in *bid* ~ *bad* 'pray' or a *-de* suffix, as in *graaf* ~ *graafde* 'digged'. However, such systemic redundancy does not entail syntagmatic redundancy. That is, it is not necessarily the case that the various strategies are used in one and the same utterance. In fact, the occurrence of double forms such as Dutch *begin* ~ *begonde,* lit. 'begin ~ 'began-ed', is highly exceptional (De Smet 2021). The reason seems obvious: redundant marking is superfluous, and would unnecessarily burden production processing (Sinnemäki 2009; Kurumada & Jaeger 2015; Leufkens 2015). Syntagmatic redundancy should accordingly be avoided for reasons of efficiency. This may be done either directly by language users, or by grammar evolving so that various strategies strictly complement one another, and do not overlap. However, it has also been argued that syntagmatic redundancy is actually useful and therefore common, because (i) it enhances the robustness of the linguistic signal against information loss (Fedzechkina et al. 2012; Levshina 2021), and (ii) it increases learnability (Sloutsky & Robinson 2013; Tal & Arnon 2022).

We test these competing accounts by investigating agent-recipient disambiguation English and Dutch. These languages may employ the same four morphosyntactic strategies to distinguish agents from recipients, viz.

(i) Constituent order, e.g. *The student gives the lecturer a book.*
(ii) Nominal marking, e.g. *The student gives **us** a book.*
(iii) Verbal agreement, e.g. *The student give**s** the lecturer a book.*
(iv) Prepositional marking, e.g. *The student gives a book **to** the lecturer.*

Under an efficiency-focused account, we expect combinations of these strategies to be rare, and single marking to be common. Under an account focused on redundancy as useful, we conversely expect multiple marking to be the default. We investigate this case study using both Present Day corpus data from Dutch (Oostdijk et al. 2013) and English (Röthlisberger 2018). While both languages employ the same strategies, they crucially do so in different ways. Dutch generally allows more leeway to the individual language producers to decide whether or not to apply a certain strategy. By contrast, in English, this choice is determined to a larger degree by grammar, with only prepositional marking really being optional for the language producer. In addition to this synchronic comparison, we also investigate the usage of these strategies throughout the development of English, using the *Penn Helsinki Parsed Corpus of Middle English* (Kroch et al. 2000). We find that despite substantial differences in the specific application, redundancy seems to be the default in all languages and stages; however, it importantly seems to operate within efficiency constraints.

Finally, we also discuss our results in terms of different approaches to efficiency, viz. the question whether our results support redundancy as (non-)efficient for production, (non-)efficient for comprehension, or whether applying redundancy only in specific environments may in fact represent an efficient trade-off between production and comprehension.

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Ongoing change and where to track it: Studying incipient grammaticalisation on the example of the German *am*-progressive

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Keywords: grammaticalisation, aspect, subjectification, spoken language, web corpora

Linguistic innovation is commonly assumed to originate in informal spoken language with low normative pressure on the speaker. Corpora of authentic private conversations are therefore of great interest to studies that seek to identify current shifts and ongoing changes within the usage patterns of grammatical constructions. Unfortunately, such corpora are costly to compile and therefore usually rather small, so that it is often not possible to draw robust inferences from the observations they afford. However, research in Interactional Linguistics (IL, cf. Couper-Kuhlen & Selting 2018) has proposed that certain kinds of computer-mediated communication (CMC) are highly similar to spoken conversational data in relevant respects, so that they are profitably analysed with IL methods and provide a rich source of comparably 'cheap' new data for the field (Dürscheid & Brommer 2009; Imo 2013). The present paper explores whether a similar argument can be made for studies of language change and grammaticalisation. In order to assess this question, we consider a fairly well-studied construction that is widely assumed to be grammaticalising in present-day German, the so-called *am*-progressive (cf. e.g. Flick & Kuhmichel 2013, Anthonissen et al. 2016) as illustrated in (1):

(1) bin da am Umbauen und gleichzeitig bin ich auch noch eine meine Wohnung am
am there at:the rebuild:INF and simultaneously am I also also a my apartment at:the
Renovieren und dahin am Ziehen
renovate:INF and there at:the move:INF
'I am rebuilding there and simultaneously I am also renovating my apartment and moving there.'

FOLK_E_00182_SE_01_T_01_DF_01, c442

Previous studies have identified a number of properties that we take as indications of the degree of grammaticalisation that the construction has attained so far: (i) the proportion of usages with non-(simple-) intransitive argument structures (as an indication of its spread to novel syntactic contexts; cf. Flick & Kuhmichel 2013), (ii) the proportion of usages with non-activity verbs (spread to novel semantic contexts; cf. Flick & Kuhmichel 2013), and (iii) the proportion of usages with additional subjective or intersubjective discourse functions (spread to novel pragmatic contexts as a result of subjectification; cf. Anthonissen et al. 2016). We compare these properties across uses of the *am*-progressive in the reference corpus of written German, DeReKo (Kupietz et al., 2010), the reference corpus of spoken German, FOLK (Schmidt, 2016) and in discussion forums from the DECOW16B web corpus (Schäfer & Bildhauer, 2012). The forum data are both informal and interactive and, owing to corpus size, they contain substantially more attestations of the construction (approximately 70,000) than FOLK (less than 150 attestations in the current release 2.19). For each parameter, we assess whether the informal written usage in DECOW is more similar to the spoken usage of the construction in FOLK than to its more formal written usage in DeReKo. We predict that usage in DECOW is on the whole more grammaticalised than in DeReKo, but not necessarily less grammaticalised than in FOLK. We close with a discussion of whether (certain kinds of) informal written data can be used as a proxy for informal spoken data in studies of synchronic variation and incipient grammaticalisation, or whether the former should receive greater attention in their own right.

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Modality and Tense: A cognitive approach to the Russian *možno* 'be possible' construction.

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Keywords: modality, future, construction grammar, corpus study, Russian

The future tense and its relation to mood and modality has been widely discussed in general and cognitive linguistics (Chung and Timberlake 1985, Bybee et al. 1994, Stojnova 2018). Russian modal constructions with the impersonal modal adverb *možno* 'can, be possible' express a situation that is possible in the past, present or future. To express future meaning a modal word like *možno* is expected to combine with a future form of the copula verb *byt'* 'be' as in (1) and (2):

(1) Korrektnye vyvody **možno** **budet** **sdelat'** na osnove itogov
can be.FUT.3SG make.INF.PFV
Global'nogo raunda.
'Correct conclusions can be drawn based on the results of the Global Round.'
[A. Kosarev. Èsperanto meždunarodnyx sravnenij // "Èkspert". 2014]

(2) Prognozy **možno** **budet** **delat'** tol'ko bliže k vesne.
can be.FUT.3SG make.INF.IPFV
'Forecasts **can** only **be made** closer to spring.'
[S. Inkižinova. Razguljalis' // "Èkspert". 2013]

However, examples where *možno* is used without the future copula have a very similar meaning as in (3) and (4):

(3) Nu da… koe-čto ešče **možno** **sdelat'**. no, uvy, uže nemnogo…
can make.INF.PFV
'Well, yes… something else **can be done**. but, alas, not much…'
[Perepiska v icq meždu agd-ardin i Koljučij drug. 2008]

(4) S tekstom, daže esli vy ego uže vyvesili, **možno** **delat'** vsë
can make.INF.IPFV
čto ugodno: redaktirovat', perepisat' zanovo, uničtožit'.
'Even if you have already posted the text, you **can do** whatever you want: edit, rewrite, destroy.'
[Zapis' LiveJournal. 2004]

In this talk I aim to clarify the semantic contribution of the future copula in constructions with *možno* and explore the whole range of factors, such as aspect of the infinitive, word order, modal function of *možno* and presence of the temporal and conditional markers, hypothesizing that these contextual factors predict the choice of construction.

My study of 800 examples (200 per each type: *možno* + *budet* + INF.IPFV, *možno* + *budet* + INF.PFV, *možno* + INF.IPFV, *možno* + INF.PFV) from the Russian National Corpus (ruscorpora.ru) shows that constructions without the future copula are 34 times more frequent than the constructions with the copula. The constructions with the copula typically combine with various contextual clues, namely temporal, sequential, conditional and other markers that unambiguously locate the situation in the future. The addition of a temporal marker forces the interpretation whereby the event denoted by the infinitive takes place in the future, while the possibility denoted by *možno* may be in the present or the future. These findings are illustrated by means of schemas of the type used in Langacker (2008).

I will also discuss the role of iconicity (Smith 2002) within the constructions with *možno* and the future copula. I suggest that the presence of the future copula between the modal word and the verb reflects not only that the verb locates the event in the future but also reflects the temporal distance between the moment when the speaker can carry out an action and the moment when the speaker performs this action. The study demonstrates that a usage-based and non-modular approach couched in cognitive linguistics facilitates an insightful analysis of the complex relationship between tense and modality.

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Grammatical Aspect and Goal Preferences: Evidence from Linguistic Analysis and Motion Event Categorization

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Keywords: Motion event construal, Categorization, Grammatical aspect, Mandarin Chinese, Swedish

The domain of motion has been a central topic for investigations of Whorfian effects over the past two decades. In parallel with many inquiries into the encoding of path and manner (e.g., Talmy, 2000), the present study focuses on the temporal properties of motion events and tests whether the grammatical category of aspect may influence the extent to which speakers attend to the goal of motion events. To do this, I examined Mandarin Chinese and Swedish speakers' verbal and non-verbal behavior with endpoints by means of a linguistic description task and a memory-based triads-matching task (see Athanasopoulos and Bylund, 2013)

Previous research has found the linguistic effect of grammatical aspect among speakers of Afrikaans, Arabic, Dutch, English, German, Spanish and Swedish. Specifically, speakers of [-aspect] languages are more likely to include endpoints in event construal (e.g., Bylund, Athanasopoulos, & Oostendorp, 2013), to fix their eyes more on potential endpoints (e.g., von Stutterheim et al., 2012) and to exhibit higher percentages of selecting reached endpoints as the criterion for categorizing goal-oriented motion events (e.g., Athanasopoulos & Bylund, 2013) than speakers of [+aspect] languages. To expand our knowledge of this line of research to a more global picture, I look at speakers' goal preferences in a language pair, [+aspect] Mandarin Chinese and [-aspect] Swedish.

Twenty native speakers of Chinese were first asked to describe what was happening in 12 scenes, each showing a motion event with an intermediate degree of goal orientation. The results showed that Chinese speakers mentioned event endpoints in 35% of scenes, a percentage similar to that of [+aspect] English speakers but significantly different from those of [-aspect] Swedish and Afrikaans speakers (Athanasopoulos & Bylund, 2013; Bylund et al., 2013). It is also interesting to note that Chinese speakers made reference to nearby endpoints in clips showing a short path more frequently than endpoints far in the distance which were located almost at the end of a long path.

In the memory-based triads-matching task, participants were asked to judge which alternate (one without any visible endpoints and the other showing a reached endpoint) looked more similar to the target with an intermediate degree of goal orientation. The results answered to the question of whether Chinese-Swedish bilinguals who acquired a typical non-aspect language as a foreign language would behave differently from Chinese 'monolinguals' or not. Despite non-significant differences in endpoint preferences between twenty-three Chinese speakers and twenty Chinese-Swedish bilinguals, a positive correlation between length of stay in Sweden and endpoint preferences provided the indirect evidence of a developing cognitive pattern from progress-salience in the [+aspect] L1 to endpoint-salience in the [-aspect] L2. From a usage-based perspective (Langacker, 2008), I interpreted that bilinguals immersed in a Swedish setting might be constantly exposed to a common usage pattern that event endpoints are frequently encoded in descriptions of ongoing events, but without any available grammatical markers of imperfectivity. Their longer stay in an L2 setting means more exposure to this usage pattern and more opportunities to apply the maximal temporal viewing frame to the construal of similar situations.

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Differentiating Chinese modals of epistemic necessity: A collostructional analysis of post-modal pattern [Mod + Verb]

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Keywords: Chinese modals of epistemic necessity, conceptual content, mode of construal, Collostructional Analysis, form-meaning mapping

Background and research aim

The meaning of a linguistic expression involves "both the conceptual content and construal of that content" (Langacker, 2008:44). Chinese modals of epistemic necessity (EnMs), such as biran, bixu, yiding and shibi, are near-synonyms that share identical conceptual content but differ in modes of construal (Cussins, 1990; Langacker, 1987; 1991).

Among all modal patterns, [Mod + Verb] is the most frequent and essential usage (Sun, 2017). This paper thus aims to explore the underlying mechanism of EnMs by analyzing the post-modal pattern in a large-scale corpus.

Method

The corpus was built based on an open-access dataset with over 2.95 billion Chinese characters from online media platforms (Xu, 2019), and sentences matching the pattern [EnM + Verb] were extracted as samples of this study.

Collostructional Analysis (Gries & Stefanowitsch, 2004; Stefanowitsch & Gries, 2003, 2005) was adopted to evaluate association strengths between words and their grammatical collocations so as to find the most attracted verbs (collexemes) of the pattern. The attracted collexeme types shared by most EnMs represent the conceptual content of EnMs, and collexemes distinctive to each EnM reflect the respective modes of construal. The collexemes were thus categorized into different types with reference to the semantic domains of lexical verbs (Biber, 2002:370-371). Last, the distribution of collexeme types of EnMs was compared with that of other modality types to indicate how such forms may correspond to modality types.

Results and discussion

The results show that EnMs are primarily attracted to occurrence verbs, causative verbs, and relationship verbs in the post-modal position. Hence, the conceptual content of EnMs represents the high certainty on 1) a new state of affairs through the occurrence of activities and events regardless of people's volition or valency-increasing operation in causative constructions or 2) the state of existence or relationship among entities. Each EnM also has its preferred modes of construal:

1. Yiding has the most diverse usage with attractions of epistemic, dynamic, and deontic modals, action, and mental verbs.
2. Biran and shibi are typical epistemic necessity modals with preferences for causative and occurrence verbs.
3. Biding likes the copular verb shi 'be' and enjoys collocating with a few action verbs indicating hard work like quanliyifu 'make all efforts'

Additionally, the collexeme type distribution of EnMs was found to be more similar to epistemic possibility modal keneng 'probably' rather than the necessity modal bixu 'must', and using necessity modals in a context of knowledge (intensification) is shared among necessity modals.

Conclusion and significance

The essence of EnMs is to use a necessity quantifier to modify epistemic modality. The epistemic sense indicates the strong likelihood of propositions, and thus EnMs attract verbs that denote a change of state or description of relations among entities. The necessity operator expresses the universal satisfaction on the given condition; thus, EnMs can work as intensifiers to stress the truth of knowledge. As a large-scale quantitative study, this study sets a methodological paradigm to explain semantic overlaps and variations of synonyms under the usage-based principle of from-meaning mapping.

How do languages encode motion events? A contrastive analysis between Chinese, Spanish, and English

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Keywords: Motion event encoding, satellite-framed language, verb-framed language, equipollently-framed language

Regarding how languages encode motion events, the "lexical doublets" (Talmy 2000) and constructionist proposals (Goldberg 1995; Pedersen 2016), which argue that satellite-framed languages (S-languages) and verb-framed languages (V-languages) follow two different rules, do not offer a completely satisfactory explanation. Furthermore, in the Chinese serial verb construction "C1 (Constituent 1: Manner verb) + C2 (Constituent 2: Path word)", since C2 lacks inflectional morphology and currently has both verb and complement uses, the typological classification of Chinese remains highly controversial: Shi (2014) consider that C2 is a Path complement so that Chinese belongs to S-language type; Tai (2003) proposes that C2 is the predicative center of the serial verb construction and Chinese belongs to V-language type; Slobin (2004) consider that C2 is also a verb and Chinese belongs to a third type of language: E-language (equipollently-framed language).

To try to shed light on these two issues, based on the data of Chinese, Spanish and English, which could represent E-language, V-language, and S-language, respectively, this article proposes that human languages obey the same General Principle of Motion Event Encoding (GPMEE). Only when the execution of the verbal action in the real world can imply (for self-agentive motion events) or generate (for agentive motion events) the Figure's displacement does the corresponding verb co-occur with the direction marker to generate the Directional Path of motion events. We can illustrate it with the verbal action *dance*: when someone dances in the real world, it is possible to perceive the Figure's displacement (therefore, the nondirectional path), for this reason it can co-occur with the direction marker (which only encodes Direction) *into* of English (1a) and *hacia* 'toward' (1b) of Spanish to generate the Directional Path of the motion event:

(1) a. She danced into the house.
b. *Ella bailó hacia la habitación*.
'She danced toward the room'

Instead, if the execution of the verbal action is only perceived at a fixed point without displacement, like *John laughed* in (2a) and (2b), due to the lack of a possible displacement (and nondirectional path), the verb cannot co-occur with the direction marker *into* (2a) and *hacia* 'toward' (2b) to describe the Directional Path of the motion event:

(2) a. *John laughed into the house.
b. **Juan se rió hacia la habitación*.
'Juan laughed toward the room'

When a sentence is headed by nondisplacement verbs, like 'they chatted/shivered' in (3a), some languages can resort to additional resources (like the adverbial phrase *all the way* added in (3a) or the Way Construction in (3b)) so that their verbal actions that do not imply displacement per se can be executed in the context of displacement, thus obeying the GPMEE and cooccurring with the direction marker:

(3) a. They chatted/shivered **all the way** to school.
b. Talk/argue/sing/smile **one's way** out of prison. (Narasimhan 2003)

Regarding the Chinese serial verb construction, given that C1 obeys the GPMEE and functions as syntactic (verb) and semantic core (which encodes Displacement and nondirectional path), while C2 does not adhere to the GPMEE and functions as a complement that is only capable of providing the meaning of Direction to the construction, we argue that Chinese belongs mainly to the S-language type rather than to the V-language or E-language type.

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The legitimating effects of proximization in discourses of public health crisis: An experimental study

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Keywords: Critical Cognitive Linguistics, public health crisis, triangulation, proximization, perception

In Critical Cognitive Linguistics (CCL), also known as Cognitive Linguistic Critical Discourse Studies (CL-CDS) (Hart 2018; Zhang & Yang 2019), proximization is identified as a dynamic positioning discursive strategy in creating fear and an important tool in the legitimation of intended social action (Chilton 2004; Cap 2008). Drawing on the insights of Mental Space Theory (Fauconnier & Turner 2002) and Discourse Space Theory (Chilton 2004), Proximization Theory (Cap 2008, 2013) addresses how discourse producers conceptually position different entities and represent US vs THEM clash through mental coordinates of three axes: space, time and axiology. However, the current body of literature has been focused on the qualitative analysis of the anticipated effects, and there is a paucity of experimental forms of analysis in this area to triangulate the conception (Hart 2016, 2018; Hart & Fuoli 2020).

Utilizing triangulation as the methodology, this article reports an experiment investigating the legitimizing framing effects of the proximization strategy in public health crisis discourse. The material was designed on the basis of a corpus linguistic analysis of 180,000 words from Chinese news coverage of COVID-19. This stage of research was to figure out the recurring patterns of proximization strategies. For the experiment, 230 participants were recruited via the online survey platform 'Credamo'. After taking an emotional affect test using the Positive and Negative Affect Schedule (PANAS) (Magyar-Moe, 2009), they were presented with two versions of proximization strategy, one strong and the other weak, and then responded to four questions for the dependent variable on a 7-point semantic differential scale. Data of 14 participants were removed for failing to pass the attention check. The data of 216 participants were used for analysis. The results showed that strong discursive proximization strategy facilitates support for restrictive anti-epidemic policies by increasing perception of threat and fear, despite participants' prior emotional affect. The study not only justifies the scholarly attention to conceptual positioning, which is closely related to mental space and cognition (Fauconnier & Turner 2002; Chilton 2014), but it also interprets the effects as evidential in the conceptual import of language forms deployed for restrictive health crisis management (Cap 2017).

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The length of English and Chinese multinomials: A constructionist approach

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Keywords: length of multinomial; the *Lotus Sutra*; translation studies; Chinese-English comparison

The term "multinomial" derives from the concept of "binomial", which was first introduced by Malkiel (1959) as "the sequence of two words pertaining to the same form-class, placed on an identical level of syntactic hierarchy, and ordinarily connected by some kind of lexical link". When there are three or more elements in the structure, it becomes a 'multinomial'. Based on the number of the elements, multinomials are further classified into four sub-groups: trinomials (3 elements), quadrinomials (4 elements), quintuplets (5 elements) and lists (6 and more elements) (Sauer & Schwan, 2017). According to the Construction Grammar theory, constructions are defined as a symbolic, conventionalised pairing of form and meaning (Croft 2001; Goldberg 2006; Bybee 2013; etc.). Therefore, as a construction, the form of a multinomial can be summarized as "Element 1 + Element 2 + ... (Connector +) Element N". The connector is usually a coordinating conjunction such as *and* or *or* and is placed before the last element, if not omitted. In addition, the semantic relationship between the elements is synonymy antonymy or complementarity. This paper aims at exploring the differences in the use Chinese and English multinomials, particularly the length of them.

The writer chooses two English translations of a Chinese Buddhist classic *The Lotus Sutra* as the source of data: one by Burton Watson (1993) and the other by Gene Reeves (2008). The reasons they are selected not only lies in the fact that they contain relatively large number of multinomials, but also with a source text, it is easier to separate the instances when the translators follow the source text from those when they choose not to, for instance, *biqiu, biqiuni, youposai, youpoyi* ('monks, nuns, laymen [and] laywomen') is translated as 'monks and nuns, laymen and laywomen' by Reeves, when it becomes two binomials instead of a quadrinomial. Methodology adopted in this paper is a comparative approach based on corpus texts, i.e., the multinomials in the two English translations and their corresponding Chinese texts. More specifically, the writer first compares the frequency of the multinomials in the English and Chinese texts and reaches quantitative conclusions regarding the distributions of the above-mentioned sub-groups of multinomials. The writer then analyses the cases when the form of the multinomial differ from its source text and discusses the features of English multinomials. A qualitative conclusion can finally be reached.

This study reflects the difference in Chinese and English in forming multinomials. Multinomials are more commonly used in Chinese while by English users they are more likely to be broken up into combinations of binomials. Among the sub-groups of multinomials, trinomials are the most frequently used in English and lists the least. The differences in such constructions reflect the different patterns of forming the language, thus the difference ways of thinking by different language users.

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Language-specific Effects on the Processing of Mandarin and Cantonese Classifiers in Adult Early Bilinguals.

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Keywords: Linguistic relativity, Bilingual cognition, Categorisation, Language processing

Empirical evidence shows that learning an additional language can result in conceptual change in the speaker's mind in domains such as time, space, and motion events (Athanasopoulos et al., 2015; Cadierno & Robinson, 2009), categorization of objects and substances (Athanasopoulos, 2007; Cook et al., 2006), etc. The majority of the bilinguals in these studies were late bilinguals. Few studies investigated early bilinguals (Bassetti, 2007) who were children and may change their cognitive behaviours in adulthood.

The current study investigates language-specific effects in adult early bilinguals who have exposure to their first language (L1 Cantonese) and second language (L2 Mandarin) since birth. We compared Mandarin monolinguals (n = 35) with Cantonese-Mandarin bilinguals (n = 36), all of whom are adult university students in a southern city in China. The bilinguals' current dominant language is their L2 (Mandarin). The conceptual categorization by L2-dominant early bilinguals is rarely seen and particularly worthy of investigation. We examined how knowledge of Mandarin and Cantonese classifiers influences speakers' conceptual categorization. We administered several tasks including a similarity judgment task, a speeded phrase-picture matching task, a free recall task, a digit span task (to measure working memory), a Mandarin classifier naming task, and a Cantonese classifier naming task (bilingual only). Data were analysed using linear mixed models in R.

The results of similarity judgment and phrase-picture matching revealed a Mandarin classifier effect on object perception in both monolinguals and bilinguals. Object pairs with the same Mandarin classifier (e.g., *towel*, *necklace*: classifier *tiao*) were rated perceptually more similar and responded slower in the matching task than object pairs with different Mandarin classifiers (e.g., *match*, *toothbrush*: classifiers *gen* and *ba,* respectively). In similarity judgment, the monolinguals gave higher similarity ratings to object pairs with the same Mandarin classifier than the bilinguals. However, there was no group distinction on object pairs with different Mandarin classifiers (Figure 1). Cantonese classifiers did not yield a main effect in either task. We observed a marginal Cantonese classifier effect in the free recall task (Figure 2). Bilinguals produced a marginally higher recall score based on clusters of Cantonese classifiers than monolinguals, but the two groups did not differ in recall based on clusters of Mandarin classifiers. Working memory and classifier knowledge were not significant covariates.

The current findings align with previous studies of language-specific classifier effects. The amplified classifier effect revealed by group differences was observed in offline similarity judgment and free recall (Zhang & Schmitt, 1998), but not in fast-speed online processing (Huettig et al., 2010; Saalbach & Imai, 2012). A longer response latency in processing the same-classifier relation was also observed in previous research (Saalbach & Imai, 2007, 2012). The bilinguals demonstrated a clear pattern of L2-dominant categorisation, heavily influenced by their predominant use of the L2 in daily life. A significant reduction in L1 use might have caused the assimilation of L1 classifier knowledge to the L2. Bilinguals might have experienced a conceptual restructuring due to the semantic erosion of L1 categorisation and a conceptual shift to L2 categorisation.

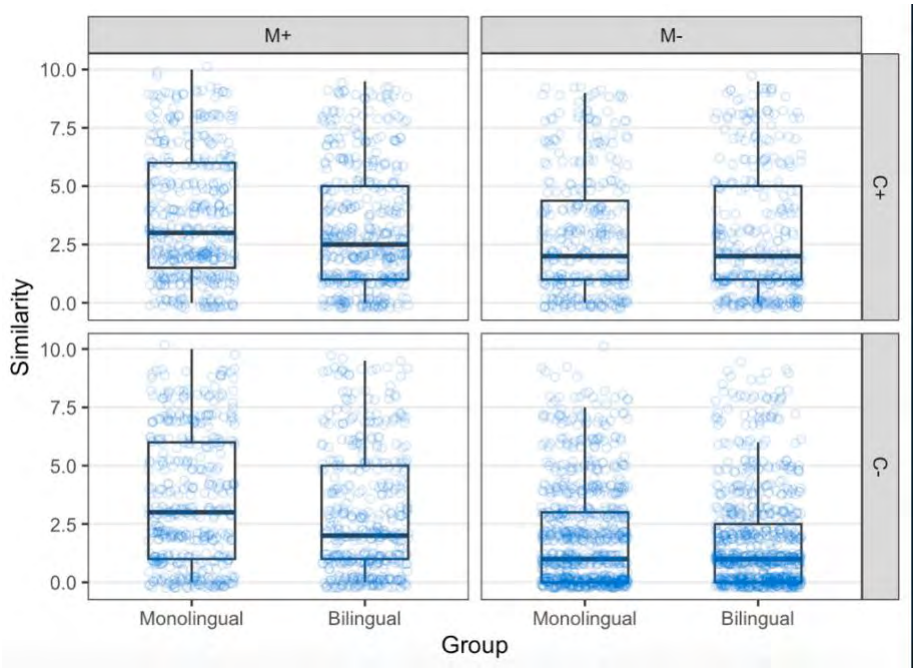

Fig. 1: Boxplots of similarity judgment by classifier condition and speaker group
Note: M = Mandarin, C = Cantonese
+ stands for the same classifier between the two objects in a pair
– stands for different classifiers between the two objects in a pair

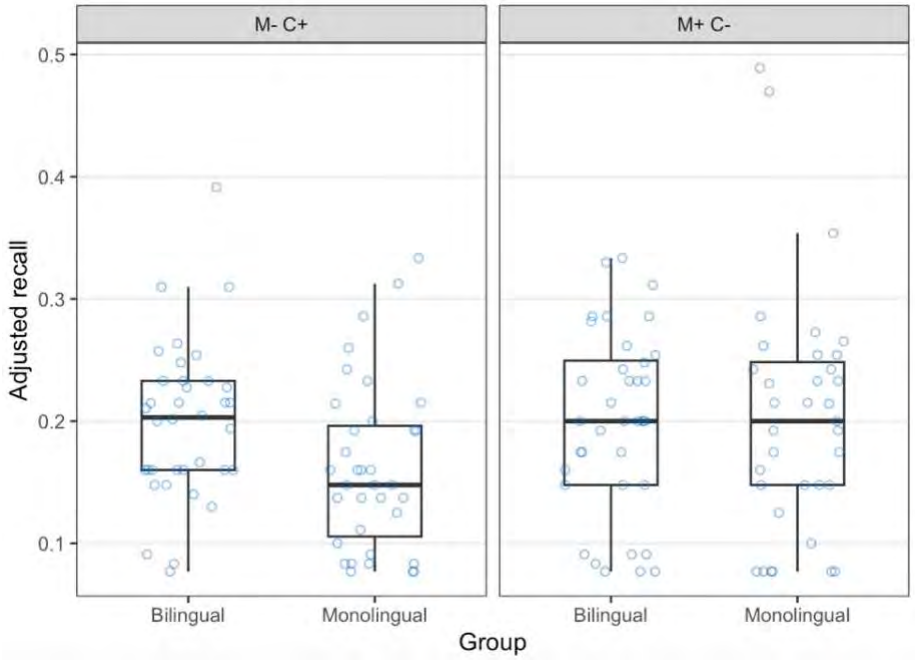

Fig. 2: Boxplots of adjusted recall scores (Pellegrino & Hubert, 1982) of the free recall task by classifier cluster and speaker group
Note: M- C+ stands for recall based on the Cantonese-classifier cluster
M+ C- stands for recall based on the Mandarin-classifier cluster

“Der Schal war gestern sogar mit frühstücken”: Form and meaning of the so-called absentive in informal written German

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Keywords: the so-called absentive, frame semantics, grammatical construction, mobile communication

The absentive is considered a “newly discovered” grammatical category, which is described as the grammatical expression of absence in a variety of European languages (de Groot 2000: 718). In this sense, an absentive expression such as “Er ist arbeiten“ ([NP][seinFIN][INF]) is often used as an answer to the question "Where are you?", because it implies the ongoing absence of the subject person (“er”/”he”) in combination with some distance from the speaker-deictic center, as opposed to the present tense form “Er arbeitet”, which suggests no such deictic distance. The subject person is expected to return after finishing the concerned activity. Studies on the absentive in German, many of those from a generative grammar point of view, show that the description of the absentive structure turns out to be problematic (Abraham 2008). Some scholars try to propose unique syntactic features and properties of the verb sein in various ways (König 2009), while some argue a constructional understanding with the absentive semantics (Krause 2002). With the controversial discussion, there is still no plausible relation between form, meaning and usage of the so-called absentive.

Following usage-based constructionist approaches within the field of cognitive linguistics, e.g., frame semantics (Fillmore 2006; Ziem 2008) and construction grammar (Langacker 1987; Goldberg 2003), this current study presents an explorative analysis of the form and meaning of the so-called absentive by focusing on empirical data from the databases Mobile Communication Database (MoCoDa) 1 and 2, collected between 2012 and 2022. It will be shown that depending on contextual factors, such as interactional, sequential or functional parameters, the format [NP][seinFIN][INF] exhibits a broad spectrum of forms und meanings. Certain usages can be found in the data, which have not been observed so far in analyses or were considered grammatically incorrect in the literature. As usually postulated, there must be a subject person who is capable of acting and is absent because of the concerned activity. However, as the example in the title „Der Schal war gestern sogar mit frühstücken“ (eventually in engl. “The scarf was even (there with us) at breakfast yesterday”) shows, there is even no person referent in the subject. As such, this usage diversity will show that the term absentive is actually not plausible in many respects. Instead of taking “absent” as its root, the format [NP][seinFIN][INF] must be associated with a much more abstract basic meaning. It may therefore be seen as a grammatical construction, which is strongly tied to the frame-based language knowledge within individual speakers on the one hand and the contextual information in the language use on the other.

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The Embodiment of 'Head' through Metonymic Metaphors in Jordanian Arabic as Compared to Tunisian Arabic: A Sub-Cultural Perspective

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Keywords: Cognitive Linguistics, Embodiment, Metaphor, Metonymy

This study aims to explore the target concepts of metaphorical and metonymical uses of "head" in Jordanian Arabic (JA) compared to those used in Tunisian Arabic (TA). Extended Conceptual Metaphor Theory as envisaged by Kövecses (2020) is adopted as the theoretical framework. Given that there is no online accessible corpus representative of Jordanian Arabic, the researchers built their own corpus. The manually-built specialized corpus consists of 195 *head* metaphorical and metonymical expressions in Jordanian Arabic (thirty seven after excluding repetitions). These expressions were collected from two sources: 20 native-speakers of Jordanian Arabic as well as the Jordanian Facebook page titled 'Al-Wakeel Radio program' which is freely accessible to users. The data of Tunisian Arabic was collected from Maalej's (2014) study. The researchers employed a bottom-up approach where linguistic expressions were the basis for establishing cross domain mappings (Zibin, 2022). MIP was used to identify metaphorical expressions (Pragglejaz Group, 2007), then Steen's (2007) five steps were followed to extract the conceptual metaphors. Data analysis reveals that through metonymic metaphors, the *head* in JA is used to profile CHARACTER TRAITS, MENTAL FACULTY, CULTURAL VALUES and EMOTIONS. The head in JA is also capitalized upon to provide explanations of several daily life experiences. The primacy of head in JA was clear in the informants' comprehension of the means by which embodiment provides the grounding for cognition, perception and language, which supports Gibbs' (2014) 'embodied metaphorical imagination'. Similarities in the cultural model of *head* between the two dialects were found, yet differences were also detected and were attributed to: the existence of a cultural filter that has the ability to function between sub-cultures, and differences in experiential focus between the two examined speech communities.

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Expanding the German FrameNet: Pragmatic frames across lexicon and grammar

Keywords: constructicography, pragmatic frames, FrameNet, German

More than 40 years ago, Fillmore (1982) introduced the distinction between semantic and pragmatic frames (or cognitive and interactional frames). Since then, very few attempts have been made to explore motivations for this distinction, both theoretically and empirically (Czulo, Ziem & Torrent 2020). Whereas semantic frames cover lexical-semantic facets of linguistic units, pragmatic frames are said to cut across 'traditional' lexical frames by taking account of context-dependent usage parameters of the target units. The need for including pragmatic frames has become even more pressing with the development of so-called constructicons, i.e. structured digital repositories of constructions specific to a target language: Even though some constructicons, notably the Brazilian Portuguese and the German one, use semantic frames for analyzing and representing constructional meanings (Boas, Lyngfelt & Torrent 2019), lexical frames as documented in the FrameNet respositories often turn out to be descriptively inadaquate for linguistic units with pragmatic functions.

The talk addresses two batteries of issues: (1) How to identify linguistic units (lexical items, mulitword-expressions, grammatical constructions) evoking pragmatic frames? And which classes, or functional domains, of pragmatic frames may be established on the basis of the units identified? (2) To what extent do pragmatic frames differ from semantic frames? More specifically, what are the criteria that pragmatic frames have to meet in order to account for contextual constraints determining the usage of such linguistic units? With these questions in mind, the talk reports on results achieved in an explorative full-text annotation task. Directed at a small set of texts of various text types, the task aimed at identifying and outlining candidates for pragmatic frames as exhaustively as possible.

Analyses of the annotated data suggest that pragmatic constraints apply to a wide range of highly diverse lexical and grammatical constructions across the full range of the lexicon-grammar continuum (cf. also Cappelle 2017). In this range, a variety of domains needs to be distinguished. First, hybrid pragmatic frames contrast with non-hybrid ones, in that the former relate to existing lexical frames (evoked, for example, by interjections or modal adverbs) specific enough to also account for capturing linguistic units with pragmatic functions. Second, annotated data seem to fall in at least four domains of pragmatic frames: (a) interactional frames (evoked by greetings or addressing constructions), (b) frames for deictic information (time, place, textual reference, social deixis), (c) frames for stance-taking and positioning, and (d) text-related pragmatic frames (evoked for instance in simulated conversations or by textual formulas). Accordingly, canonical categories used in constructicography so far (Fillmore, Lee-Goldman & Rhomieux 2012; Lee-Goldman & Petruck 2018) need to be extended substantially. Finally, beyond coverage issues, a constructicographic challenge to be addressed is to account for contextual embeddings of constructions, yielding pragmatic interpretations at the level of individual instances which, however, need to be generalized in order to fully account for the construction's function (Finkbeiner 2019). The talk concludes by introducing a constructicographic apparatus to document and implement the pragmatic frames identified along with the linguistic units evoking them in the German FrameNet Constructicon (framenet-constructicon.hhu.de).

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The Pronoun “I" as a Subject of Self- and Self-as-the-Other-Reference

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Keywords: pronoun I, pragma-semantics, self, speaker.

1. The reflexive loop: "The "I" is the one who says "I" (Benveniste, 1966) identifies and simultaneously transforms the real person, the I-speaker, into an object of a language, the pronoun "I", therefore logical-semantic and lingual-semiotic operations may be extrapolated on this object. The real speaker can exist only in the actual world. Still, a chain of intermediate speakers (indexes) is built between him and a text, and the "appropriation" of a language (in the Benvenistean terms) is assigned to these indexes. It becomes possible to move the "I" to other worlds, times, and loci, as well as to establish close to metaphorical and metonymic relations between the “I” of an actual speaker and referentially different semiotic "I "-s of an utterance. The pronoun "I" is an indication of a speaker and a key mechanism for self-, meta- and other-description and correlation of an utterance with its actual and potential contexts.
2. By logical-semantic and semantic-syntactic analysis of language, it can be demonstrated that a splitting of referentially different "I" may occur in different modal contexts. The most significant distinction by status can be described as a distinction between the performative self and the descriptive self, that is between the "I" who speaks (describes) and the "I" about whom speaks the first "I". (Ross's performative hypothesis – Ross 1970). In addition, it is possible to distinguish between metonymic “I’- s (preserving substantive identity in differing worlds; < I_1 am speaking here and now> I_2 may not be here now - two “I” are the same selves, but the first is located in the actual world-context, and the second self is transposed to some imaginary world) and metaphorical I-s (substantively differently selves replacing each other in relation to different worlds-contexts:) "If I were you, I hate myself" – cf. Lakoff 1996), It is also productive to distinguish between actual and possible contexts in which different, including imaginary "I "-s act as a speaker (various versions of 2-D semantics,- D. Kaplan, D. Lewis, Stalnaker, Chalmers), esp. when in literary works, when a narrator is located in an imaginary world (Lewis, 1979). On other grounds, different, in some situations, mismatched "I" are also distinguished in cognitive models (G. Lakoff), describing the splitting of "I" into Subject and Personality (Self) or into observer and participant. (Lakof 1970)
3. These data lead to the conclusion that the formulation of Emile Benveniste should be supplemented by the formula that was suggested by the originator of the second-order cybernetics Heinz von Foerster: "The reflexive personal pronoun" 'I" appears as the indefinitely applied recursive operator, … or in words: “I am the observed relation between myself and observing myself.” (1981, p. 268). The different meanings and uses of this pronoun reflect various forms of communication between the "I" as the obligatory agent of speaking and observing and the "I" as the object of description and observation. This described "I" in turn, can be both an agent and an object of an action. Within the language system, a distinction is created between internal and external references, each of which has its own semiotic (imaginary) 'I'-agents (see Niclas Luhmann's systemic theory).
4. There are various "I" -s, arising in the process of transition from the speaker-substance to semiotic "speaking entities", determining an interaction between utterances and contexts. This indicates that intermediate subsystems-interfaces arise between language and speech, between utterance and context. As a result, the "I" as the interface between text, language and context may be split into different in its status "I "-s, each of which is a key point of the corresponding subsystem of reference and description.

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Describing taste:
A comparative study of taste terms in Estonian and German

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Keywords: language, perception, taste terms, naming strategies, cultural factors

A taste sensation is a deeply subjective perception which can be shared with others only via language. A taste experience is a multimodal sense perception, influenced by other modalities like touch and smell (e.g. Bagli 2021). Furthermore, cultural and collective aspects of a taste sensation determine perceptual behaviour of a speaker in a great extent (Bieler & Runte 2010). Since food consumption, eating behaviour and related preferences are a part of everyday costums, it gives rise to the premise of a rich gustatory lexicon in all languages. But taste vocabulary is not universal, as many recent studies has shown. (Rhee & Koo 2017)

The objective of this work is to present a comparative analysis about actively used taste terms, and give an overview of lexical strategies in Estonian and German which are genetically unrelated, but culturally close, since Estonian has developed under the German influence during the period of establishing the Estonian literary language (Ross 2016).

The study is based on taste terms collected from 43 native speakers of Estonian and German using two field experiments: list and description task (Davies & Corbett 1995; see Sutrop 2002). The comparative approach has been chosen to characterize the similarities and differences in taste naming in Estonian and German in order to determine the relevant cognitive and cultural aspects of the active taste vocabulary of both languages.

The speakers of both languages prefer to use basic taste terms (see Berlin & Kay 1968; Bieler & Runte 2010), such as *magus/süß* 'sweet', *soolane/salzig* 'salty', *hapu/sauer* 'sour', *kibe/bitter* 'bitter'. The basic taste terms are followed by adjectives related to subjective evaluation (e.g. *hea/gut* 'good'), food intensity (e.g., *terav/scharf* 'sharp', *vürtsikas/würzig* 'spicy'), food conditions which refer to temperature, consistency and texture (e.g. *külm/kalt* 'cold', *vedel/flüssig* 'liquid', *kuiv/trocken* 'dry'). In addtion, some source-based descriptors were listed in both languages which differed to a great extent (e.g. *piprane* 'peppery', *rasvane* 'fatty'; *mehlig* 'floury, starchy', *fruchtig* 'fruity'). According to the results, the loan word *umami* show a distinct occurance in the idolects of both language speakers. This reflects a recent inclusion of the lexical item in the active taste vocabulary of Estonian and German.

Altough there are some cultural differencies in taste naming, the results of the current study indicate that there are more similarities than differencies in the active taste term use in both languages. This might be due to cultural and habitual commonalities between the two language communities.

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Conceptualising medicine in German and English: a functional, text-typological perspective

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Keywords: Metaphors, Medicine, Virus

The pervasiveness of metaphors in specialised domains and their role in shaping scientific thinking has been widely recognised and investigated (e.g. Brown 2003; Drewer 2003; Hermann & Sardinha 2015). Many metaphors used in medical communication are deeply rooted in medical thinking (e.g. Bauer 2006; Sander 2012 among others) and they are still used at every level of communication, thereby showing different functions: for example, they can be heuristically used in theory building and /or explanation as well as in the communication with laymen (e.g. Fleishman 2008; Schachtner 1999; Semino 2021 among others). Following new pragmatic perspectives (Steen 2008, 2015) on the Conceptual Metaphor Theory (Lakoff & Johnson 1980), they might, in turn, be linked to the more general function(s) of the text(s) and be ultimately linked to the function of the genres (e.g. Berger 2016, Skorczynska & Deignan 2016 among others). Specialised knowledge and cognitive models are created, in fact, through texts, which, in turn reflect and reinforce those schemes. Moving from these assumptions this study investigates the role played by medical metaphors in different genres belonging to three fundamental levels of specialised communication: research, academic-didactic communication, and popularisation. More specifically, following research questions have been addressed in the study: What metaphors are used for coronaviruses (and related phenomena such as virus mutation and vaccination) in popularised articles, textbooks, and research papers? How are they verbally and/or non-verbally expressed? What is their function and how does such function relate to function of the text(s) in which they occur? Do they differ in frequency and / or linguistic form, i.e., how do they reflect genre differentiation?
The MIP (Nacey, Dorst, Krennmayr, & Reijnierse, 2019; Pragglejaz Group 2007; Steen, Dorst, Hermann, Kaal, Krennmayr, & Pasma, 2010) has been used to identify metaphors for coronaviruses in (German) textbooks of virology, (English) research articles and (German) popularised texts. The study sheds light on genre-specific metaphor use in medicine and, since English research papers are compared to German texts, it also adresses contrastive issues which might be integrated into further wider investigations.

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Verbal descriptions of experience and the conceptualization of emotion across cultures

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Keywords: concepts, discourse analysis, cross-linguistic, natural language, computational linguistics

Language provides a window onto how individuals or peoples conceptualize the contexts and events they encounter. For this reason, it is often used in cross cultural studies of subjective experience, including emotion. In many cases, the analysis of 'emotion language' focuses on the words that are used to label and thus categorize different types of experiences, and in doing so sheds light onto the structure of emotion concepts across languages (Jackson et al. 2019). While words are convenient shortcut to emotional meaning, language is more than just a collection of labels. It indicates which features of experience are foregrounded (e.g., whether speakers attend to bodily sensations, cognitive processes, or the actions and perspectives of others; Boyd & Schwartz 2021), and how speakers position themselves in relation to events (e.g., shifts in verb tense and pronoun use suggest changes in psychological functioning; Nook, Schleider & Somerville 2017). To gain access to various dimensions of emotional meaning, linguistic analyses that go beyond emotion words are necessary.

In the present study, we explored cross-cultural differences in the conceptualization of emotion using verbal descriptions of experience, as spontaneous and unconstrained narrations that unfold in context may better approximate how speakers conceptualize emotion in everyday life. We conducted semi-structured interviews in which speakers of Belgian Dutch and North American (US) English (100 for each) described recent emotional events. These groups share linguistic and historical similarities (Majid, Jordan & Dunn 2015), yet previous research has also demonstrated subtle differences in emotion concepts (Boiger, Deyne & Mesquita 2013), granting a direct and meaningful comparison. We analyzed the interview transcripts both qualitatively and quantitatively. First, we characterized their contents using topic models (Blei, Ng & Jordan 2003). Second, we coded them for various grammatical (e.g., personal pronouns) and semantic categories (e.g., emotion- vs. cognition-related language; Pennebaker et al. 2015). Finally, we conducted an inductive analysis of the occurrent themes (Braun & Clarke 2006).

Using this multi-method approach, we observed that US English and Belgian Dutch speakers described similar types of emotional events; however, they used different linguistic resources, suggesting corresponding differences in conceptualization of emotion. Speakers often reported feeling good about helping others or being with friends and family, and bad about conflicts at work or navigating daily hassles. Despite these overall similarities, US English speakers used more emotion-related language and first-person singular ('I') pronouns, whereas Belgian Dutch speakers used more cognition-related language and second-person singular ('you') pronouns (both in the overall transcripts and concordances for specific emotion words). Results were further corroborated by the inductive thematic analysis: while US English speakers highlighted the emotional intensity and personal impact of events; Belgian Dutch speakers more often describe their reasoning and general approach to life. Taken together, our observations are consistent with previous psychological research on US and Belgian culture and echo the conceptual distinctions uncovered between English and Dutch in other domains. We evaluate our approach against other means of exploring the conceptualization of emotion across cultures and discuss plans for analyses of interviews conducted in Turkish and Central American Spanish.

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Poster presentations

Turn-Taking-Free Conversation

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Keywords: Conversation analysis, turn-taking, turn-taking-free conversation, Arabic

Turn taking is the salient principle that organizes talk-in-interaction. Ideally, in a conversation, one party speaks at a time (their turn), and then another party (whether nominated or self-selected) takes up a turn to speak (Sacks, Schegloff, and Jefferson 1974). However, many a time, a conversation does not proceed as smoothly as depicted by turn taking. There are scenarios where turn taking is not observed, for certain communicative reasons, obviously. Such cases involve gaps, silence, simultaneous talk, overlaps, interruption, etc.

An interesting phenomenon of talk-in-interaction which violates almost all principles and practices of turn taking is the 'how are you' exchange between two persons who have not seen each other for a while in Saudi Arabia, especially in Qassim region. The Properties of this type of conversation include the following. (a) No turn taking is observed; that is, there is a lot of overlap. In fact, the whole exchange is simultaneous talk: Interactants talk over each other throughout the conversation. (b) There are no adjacency pairs. It is not a question-response exchange. Actually, each person speaks a sort of chain-of-utterances, so to speak. (c) The exchange might last for about a minute or two, with the same string of utterances repeated over and over. (d) There might not be eye contact at certain points in the interaction.

Interestingly, this type of exchange does not seem to be a 'counter' in Schegloff's (2007) sense (e.g., how about you? as a response to 'how did you like it?'). Further, overlaps here do not seem to "result from a competition for the turn - space between speakers at and around turns' possible completion points" (Hayashi 2013: 175).

Schegloff (2007:1) proposes that most of the talk-in-interaction can be explained in terms of action, rather than topicality. That is, we should look at what a particular turn (including extended turn) is doing rather than what it is about. It seems that the type of interaction at hand can be explained along these lines. That is, instead of studying individual turns in the conversation, which would be a hard task, we could better look at the (social/communicative) actions accomplished by the exchange as a whole. In particular, it seems that with such 'turn-taking-free' exchange, the participants attain certain communicative purposes. The participants try to establish their social bond (phatic expressions). Further, repetition of the exchange all over might serve the function of avoiding potential odd silence. Finally, the whole exchange seems to accomplish the action of 'I-miss-you' greeting. A typical 'I miss you' exchange in Qassimi would go as follows.

Rakan : ja hala(.)akhbarak?(.)wish luunak?(.)asaak Tayyeb?(.)asak bkheir?(.) ulumak
hey hi your news how are you hope you good may you Ok your news
Turki :ja hala(.)akhbarak?(.)wish luunak?(.)asaak Tayyeb?(.)asak bkheir?(.) ulumak
hey hi your news how are you hope you good may you Ok your news

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Early productions of Nominal Plural Inflection. A Cognitive Grammar Analysis

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Keywords: language acquisition, grammatical number, inflectional morphology, plural inflection, cognitive grammar

In Spanish, nominal plural inflection is expressed by adding the morpheme /-s/ or its allomorph /-es/ to the base of the nominal element. According to the *Nueva Gramática de la Lengua Española* (Real Academia Española, 2010), this inflection entails the presence of "more than one object or entity" of a specified type. However, the plural can take other semantic values. These include lexical plurals that do not indicate multiple instances of a specific type (e.g., *víveres*, "supplies"), plurals with a double object, that is, discrete, symmetrically doubled entities (e.g., *cejas*, "eyebrows") that function as a set (Farrell, 2000), and pluralia tantum nominals, which either do not exist in the singular or are not frequent in speech (e.g., *trastes*, "dishes").

Various studies have analyzed the acquisition of the plural in Spanish, but they tend to focus on morphology and syntax (Arias-Trejo et al., 2014; Lleó, 2006; Marrero & Aguirre, 2003; Olvera Yabur, 2018). The semantic characteristics of this inflection have been little studied in child language and have not yet been studied in Spanish-speaking children. This study uses the cognitive grammar approach to the plural (Langacker, 1987; 2008) to describe how children establish the meaning of plural inflection.

From a semantic perspective, grammatical number, and therefore the plural, is expressed mainly in count nouns. According to Langacker (2008), count nouns can refer to physical objects that are heterogeneous and quantified (e.g., *lápiz/lápices*, "pencil/pencils"), a conceptualization that corresponds to the prototypical plural of "more than one." In contrast, mass nouns refer to homogenous matter and physical substances (e.g., *aire*, "air"; *agua*, "water"; *piel*, "skin"; *arena*, "sand") that cannot be counted or pluralized. However, there are exceptions, including nouns that are typically count nouns, whose semantic conceptualization is homogenous and similar to a mass noun (e.g., *lentes*, "glasses").

This study is a corpus-based longitudinal analysis of three middle-class children (2;00,22-3;01,28) from Mexico City, all monolingual in Spanish. Each production ($N = 491$) is considered according to its communicative context in spontaneous interaction. The results show that in early production, Spanish-speaking children use nouns with a plural inflection that do not follow the semantic prototype; they systematically use the homogenous mass forms of lexical plurals (e.g., *juguetes*, "toys"), plurals with double object (e.g., *ojos,* "eyes"; *manos*, "hands"), and pluralia tantum nominals (e.g., *cosquillas*, "tickles"). We conclude that linguistic development of nominal plural inflection in Spanish is not restricted to its morphological and syntactic values, but also requires acquisition of the conceptual distinctions that underlie grammatical number.

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Motion Events in English Language Teaching: An investigation of *Manner* in the context of Australia, Iran, and Turkey

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Keywords: Motion events; Manner; Cognitive typology, Metaphor, EFL textbooks

Motion events have been the target of many studies since their introduction by Talmy (1985) to find how motion events are encoded across various languages. The overwhelming majority of investigations have compared languages cross-culturally with English and Spanish (Slobin, 1996, 2004). However, the related literature regarding different aspects of this cognitive typology in Indo-Iranian and Altaic languages is insufficient. Since motion events represent cognitive styles and conceptualizations, language teaching and learning is a controversial subject of investigation. To provide insights and contribute to the development of English Language Teaching (ELT) worldwide, we conducted this interdisciplinary study on the verge of cognitive linguistics and ELT. We compared EFL textbooks taught in Iran and Turkey, employing the context of Australia as the source of comparison as the target language. Data were collected from two corpora; one consisting of three English textbooks taught at high schools and one consisting of three authentic novels in each language. Having analyzed the motion components in the corpora, we discovered the discrepancies and diversity of patterns in the languages and the corresponding English textbooks. A detailed comparison of *Manner* in these languages revealed that Talmy's typology needs further investigations for a more robust classification of languages. Classifying languages based on how salient *Path* or *Manner* are in their motion events is suggested to be a more feasible cross-linguistic typology (Ibarretxe-Antunano, 2009; Özcaliskan, 2009). Hence, English would be a more manner-salient language, and Turkish a more path-salient one. However, this idea does not encompass languages such as Persian. According to our results, Persian has a unique Light-Verb Construction system that distributes the motion-event components throughout the sentence. Not only may the verb be formed of more than one verb, but even additive clauses are employed to encode either *Path* or *Manner*. The EFL textbooks in Iran and Turkey do not fully picture English cognitive structures.

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Evaluating speech and image coalescence in meaning construction for frame-based multimodal annotation

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Keywords: FrameNet, Multimodality, Eye-tracking, Annotation, Multimodal dataset.

Multimodal approaches have been gaining traction in Computational Linguistics in a myriad of datasets, model architectures and tasks (Hodosh et al., 2013; Young et al., 2014; Plummer et al., 2015; Elliott et al., 2016; Lala and Specia, 2018; Yao and Wan, 2020). This paper evaluates evidence on how speech and image coalesce in meaning construction in the experience of TV show viewers, discussing to which extent a dataset annotated following the FrameNet model (Belcavello, 2020; Belcavello, 2022; Viridiano, 2022; Torrent, 2022) can represent such meaning. We report on an eye-tracker experiment in which we compare the gaze points of interest of two different groups: one that watches the complete version of the show and another who watches a modified version, in which speech was completely removed. The hypothesis was that speech could direct gaze and, so, determine the ways image and text are combined in meaning construction. Results, however, indicate that the interference of speech in generating patterns of gaze is subtle and, in general, less effective than visual language or cinematic language expressed by camera angles, movements, framing and image composition. Such results, then, indicate that speech and text, although perceived as different modes, should be analyzed in combination with each other. In terms of Frame Semantics (Fillmore, 1982), it indicates that patterns of frame evocation should consider data as a whole, composed of both textual and visual material.

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Competition between ZA- and V- Prefixes for IN-PATH Description in Russian.

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Keywords: Motion event description, Russian prefixes, Satellite-framed languages

Russian like most other Slavic languages is considered a "satellite-framed" language from the perspective of cognitive typology, with the main verbal stem usually expressing the manner of motion, while the path is indicated by "satellites" e.g., verbal prefixes (Talmy 1985, 2000; Hasko 2010; Iakovleva 2012; Pavlenko & Volynsky 2015; Filipović 2007), see (1):

(1) Paren'	vbežal	v	besedku.
guy.SG.NOM	IN-run-PST.SG.M	into	gazebo

'A/the guy ran into the gazebo.'

However, Russian verbal prefixes have numerous verb-class-specific lexical meanings, and grammatical functions of perfectivization resulting in their complex functionality and distribution. Moreover, the same motion event can be expressed by different prefixes depending on the intention and/or perception of the speaker, see (2):

(2) Drug	zabežal	v	besedku.
friend.SG.NOM	IN-run-PST.SG.M	into	gazebo

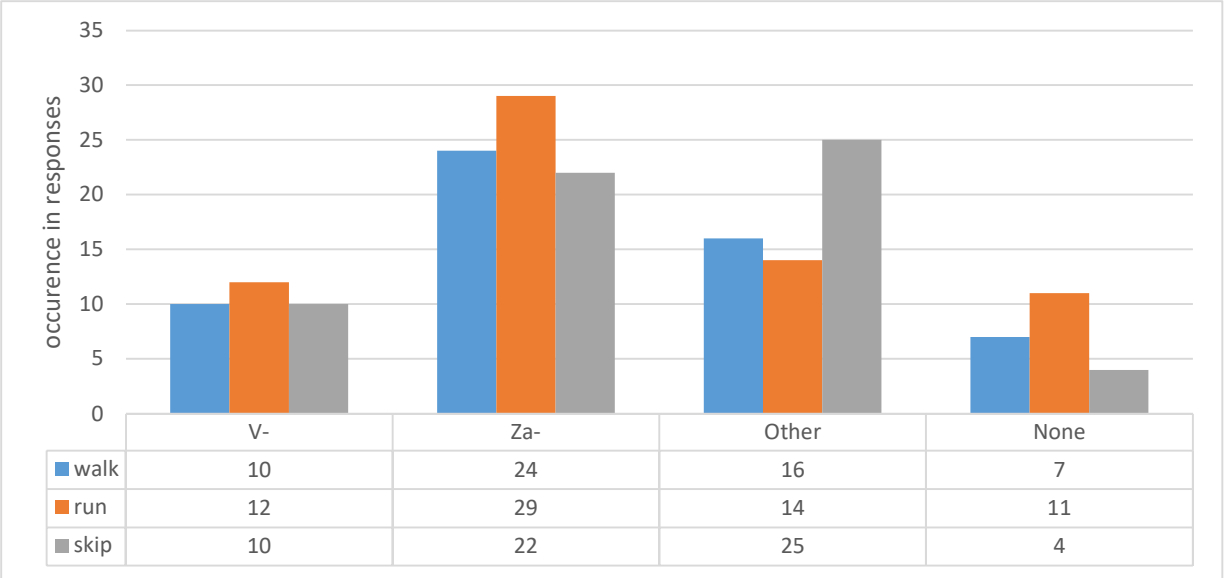
'A/the friend ran into the gazebo.'

Examples (1) and (2) show the competition existing between two verbal prefixes used in Russian motion event descriptions: V- has the meaning of moving inside the boundary of the landmark, whereas ZA- has the meaning of crossing a relevant boundary or the orientation point of the landmark (Janda 1985; Sokolova&Lewandowski 2010). The present research investigates the use and distribution of two Russian verbal prefixes ZA- and V- for describing IN-PATH in the motion event descriptions based on the results of a video stimuli-based elicitation experiment[1]. The experimental video contained 52 clips that demonstrated motion events incorporating different combinations of three different factors: Manner-Path-Deixis. 20 native Russian speakers, aged between 15-47 years participated in this study. The data collection was conducted in 2014 in Khabarovsk, Russia. In the present study only the results of nine clips containing the scenes of walking, running, and skipping into a gazebo from three deictic perspectives: venitive, andative, and neuter are compared, thus, the data set for the analysis included 180 utterances.

Figure 1 shows the distribution of V- and ZA-prefixes use across three types of IN-PATH motion scenes. The results demonstrate that ZA- prefix is preferred over V- prefix. In addition to ZA- and V- prefixes, other prefixes were used with U- (away), POD- (to/towards), and PRI- (to/towards) among the most frequent ones. The alternative prefixes did not express IN-PATH but rather were used to indicate the deictic aspects of the events with U- used mostly in the andative scenes, while POD- and PRI- were used mostly in the venitive and occasionally neuter scenes.

Overall, the results demonstrate the experimental data suggesting that for Russian speakers the boundary crossing is more salient than the movement directed inside the landmark and provide the empirical support for the previous research based on native speakers' intuition and literary corpora. The polysemous and polyfunctional nature of the ZA- prefix might be one of the factors contributing to its higher frequency as it contains initiating and purpose-oriented meanings (Janda 1986; Sokolova&Lewandowski 2010) even if they are not existent or explicit. Moreover, depending on the speaker's position, other prefixes could be used to prioritize the expression of the deictic aspect, which in its turn raises the question of whether the verbal prefix is the prioritized slot for path expression in Russian or should the prepositional phrases be considered as the main means for the expression of the path as, for example, in English. Therefore, a further investigation into the use, distribution and competition between the two prefixes ZA- and V- can provide a fine-grained differentiation of their functions for motion event descriptions.

[1] This project is a part of the NINJAL project "An empirical and typological study of the grammar and semantics of predicates" led by Prof. Yo Matsumoto



	V-	Za-	Other	None
walk	10	24	16	7
run	12	29	14	11
skip	10	22	25	4

Figure 1. Distribution of prefix use across the three manner types of the motion events.

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We tried our best to do so: Modelling the Superlative Objoid Construction in Late Modern American English

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Keywords: Superlative Objoid Construction, Late Modern English, analogical extension

Since its inception, one focal area in Construction Grammar (CxG) has been the investigation of inheritance relations between different constructional schemata in the construct-i-con (Goldberg 1995; 2006, etc.). In this presentation, we extend previous research in the field to the pattern we refer to as the Superlative Objoid Construction (SOC), as in (1a-b).

(1) a. I **tried** *my best* to do so, I assure you! (MAG, 1874)
b. Carrie had **worked** *her hardest* to please Isabel. (FIC, 1934)

The SOC combines a subject NP with a transitive/intransitive verb (*try*, *work*) followed by a possessive pronoun (*my*, *her*), and a superlative adjective (e.g. *best*, *hardest*). What sets the SOC apart from the related Cognate Object Construction (see 2b) is that the post-verbal NP of the construction is only object-like: it lacks the nominal head typical of regular object NPs, and it resembles manner adverbials, acting as a modifier of the process expressed by the verb.

(2) a. Steve **smiled** *his sweetest* at Aunt Belle. (FIC, 1920)
b. She was **smiling** *her sweetest smile* at it! (FIC, 1876)

On the basis of 6,691 SOC examples from COHA (Davies 2010), the research questions that this study addresses concern: (i) the spread of the SOC from transitive verbs like *try* (1a) to intransitives such as *smile* (2a), (ii) its entrenchment during Late Modern English (LModE), (iv) its relation with the COC (2b), and the *at*-SOC (3), and (v) the trajectory of change of the SOC with respect to the animacy of its subjects, and the usage frequency of infinitival complement clauses (e.g. *to do so*, *to please Isabel* in 1a-b).

(3) During the last one or two hours we **worked** *at our best* … (MAG, 1938)

We apply variability-based neighbour clustering (Gries & Hilpert 2008) to determine the important stages in the development of the SOC, and collexeme analyses (Gries 2014) to identify the most distinctive verbs as well as the verb-Objoid combinations of the construction at the respective stages in its development. In addition, for the sub-sets of the SOC data that show variability between the COC (2a-b) and the at-SOC (3), we fit a generalised linear mixed-model tree (Fokkema & Zeileis 2019).

The results confirm the layered development of the SOC from transitive verbs in the bare SOC towards verbs that rank lower in transitivity. These also support the further entrenchment of the SOC during LModE, with analogical extension of the construction to low-frequency intransitives like *bloom* (see 4).

(4) … I've been wanting to see … young love come up like a flower and be given its dew and sun and rain -- and bloom and **bloom** *its best*. (FIC, 1899)

On the basis of our collocational data, we argue that the COC is an unlikely bridging context for the emergence of the SOC. With respect to the variant *at*-SOC, there appears to be a clear division of labour between the two allostructions.

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Framing Fled People: An Analysis of Turkish Media's Use of Migration Metaphors on Twitter in Covering Fled People

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Keywords: Metaphor, Migration, Twitter, Turkey

Metaphors play an important role in human cognition, helping us understand abstract concepts and filling lexical gaps. They are also highly persuasive and can create new connections between ideas. This is why they are significant for individuals in positions of influence, such as the media (Charteris-Black, 2004). This study focuses on the use of migration metaphors by Turkish media on Twitter in their coverage of fled people.

In Turkey, migration has been a heavily debated topic since 2011. Three labels used to refer to fled people in Turkish - *göçmen* (migrant/immigrant), *mülteci* (refugee), and *sığınmacı* (asylum-seeker) - were analyzed to investigate the potential discriminatory effects of their use in metaphorical expressions. The study examined the use of these labels by the three Turkish media outlets with the most followers on Twitter: Habertürk, Hürriyet, and Cumhuriyet. A sample of 450 tweets were collected and analyzed using critical metaphor analysis to understand the types of metaphorical conceptualizations used based on the label and how the political stance of the media outlet influenced the framing of refugees.

The results of the study indicate that while *göçmen* and *mülteci* overwhelmingly elicited negative sentiments and framings, *sığınmacı* evoked more positive metaphorical frames. The most common conceptual metaphors associated with these labels were CRIME (*göçmen*), VICTIM (*sığınmacı*), and PRESSURE/BURDEN (*mülteci*). This shows that conceptual metaphors are influenced by the labels chosen. Additionally, the study found that the frequency and spread of conceptual metaphors were affected by the political leaning of the media outlets. Media outlets aligned with the government primarily used the VICTIM metaphor, whereas those in opposition employed mainly the CRIME metaphor. This suggests that the metaphors used by media outlets in their coverage of refugees matched their political stances.

To conclude, this study highlights the importance of understanding how metaphorical language can shape public perception and the potential biases and discriminatory effects it may have. It also shows that the conceptual metaphors used in media discourse regarding migration in Turkey are influenced by the labels chosen and the political stance of the media outlet.

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Disruption and Societal Change: Exploring Knowledge Systems and Practices

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Keywords: disruption and societal change, digital turn, quantitative methods

Digitization is a disruptive process which drastically transforms and challenges institutions central to the so-called knowledge society. In accordance with the current trend within the humanities to combine quantitative and qualitative methods, the presented research project incorporates both the empirical exploration as well as the heuristic interpretation of language data while also including findings from psychological experiments. An interdisciplinary project team consisting of researchers from the fields of linguistics and psychology, we strive to investigate epistemic concepts in institutions such as university, library, and school with respect to the digital turn through their systems and practices. Close collaboration with TU Dresden (specifically with the Open Science Initiative), the Saxon State and University Library Dresden and the University School Dresden allows the project to gather authentic data and validate methods under development.

Combining expertise from linguistics and psychology, large data samples are collected from various sources, domains, and stakeholders. Methods from corpus linguistics and discourse analysis are complemented by an experimental psychological paradigm consisting of triad tests and Repertory Grid interviews (Kelly 1955). Integrating different types of evidence while also aiming for consistency, the main goal of the research project is to identify central concepts and affective connotations on an individual as well as on a collective/institutional level, allowing for a broad perspective of the discourse surrounding transformations induced by digitization in educational settings.

Addressing the question of the psychological reality of corpus linguistics (Arppe et al. 2010) a special interest is taken in the comparison of computational and statistical analysis in both linguistics and psychology including resulting models and visualizations (Janda 2019). As such the presentation will outline our shared theoretical and methodological framework and focus on the exploration and documentation of key concepts as representations of knowledge systems and practices within the linguistic and psychological subprojects to illustrate commonalities as well as differences.

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The interplay of conceptualization and case marking in the directional cases of Udmurt

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Keywords: spatial cases, event conceptualization, verb semantics, Uralic languages

In this paper I investigate the conceptualization and marking of starting and endpoints in Udmurt (Uralic). More precisely, I investigate the conceptualization of starting and endpoints of events, and how the differences in conceptualization are reflected in the case marking in Udmurt.

The spatial case system of Udmurt has in addition to a four-way division between LOCATION, SOURCE, GOAL, and PATH a division in its SOURCE- and GOAL-cases, i.e. there are two SOURCE-cases (elative and egressive) and two GOAL-cases (illative and terminative). The previous literature has used the concept of "limit" to distinguish between the primary function of egressive/terminative from elative/illative (e.g. Bartens 2000: 104–109; Edygarova 2022: 512; Kondrat'eva 2011: 161–193). "Limit" is the spatial or temporal starting or endpoint of an action coded as a Landmark and marked by the appropriate case. Additionally, Kondrat'eva (2011: 174¬¬–175, 193) mentions the limit of scalar changes, e.g. temperature or price. An example of the spatial use of terminative is given in Example 1.

(1) Udmurt dunne 16.03.2016 (Arkhangelskiy 2018)
Karakulov-jos *Kazań-jśen* *pi̯rak* ***Śimferopol'-oź*** *lob-izi̯* *samol'ot-en.*
[name]-NOM.PL [name]-EGR all.the.time **[name]-TERM** fly-pst1.3pl plane-ins
'The Karakulovs flew all the time with a plane from Kazan' to Simferopol'.'

In Example 1 the movement expressed by the predicate ends when the Landmark is reached, and therefore terminative is expected. However, cases like Example 2 are also abundant. In this example, too, the movement ends when the Landmark is reached, but, unlike in Example 1, the endpoint is coded by illative. Similar pairs can also be given for elative and egressive.

(2) Udmurt dunne 09.01.2016 (Arkhangelskiy 2018)
No *mon* *kot'ku* *tod-i:* *odno* *bert-o* ***lž-e,*** *mi̯nam*
CNJ 1SG always know-PST1.1SG sometime return-FUT.1SG **[name]-ILL** 1SG.GEN
ot-i̯n *anaj_ataj-e.*
DMST-INE mother_father-POSS.1SG
'But I always knew that I will return to Izhevsk someday, I have my parents there.'

The difference between Examples 1 and 2 cannot be explained by invoking some limit that is reached in Example 1 but not in Example 2. Instead, I suggest that the difference between the use of "limit" and "non-limit" cases lies in the conceptualization of the situation, which has grammaticalized to a distinction made by cases. "Limit" cases tend to be used in contexts where the starting or endpoint needs to be explicitly coded, whereas "non-limit" cases are used when these can be inferred from the context.

I will concentrate on two phenomena affecting the conceptualization and their effect on the choice between the cases. These are:

1. The boundedness of the action (cf. Croft 2012: 70–126; Depraetere 1995). If the action has a natural starting or endpoint (or both), a "non-limit" case suffices to code the boundary of the action, as the starting or ending is expressed by the verb. This explains the difference between Examples 1 and 2, as the movement in Example 1 is not naturally bounded, whereas in Example 2 it is.

2. The properties of the Landmark (e.g. Coventry et al. 2010; Vandeloise 2007). The case is chosen depending on whether the Landmark has clear boundaries that can express the boundaries of the action, or not. Example 3 has a relational noun construction expressing a relational area (cf. Carlson 2010) as its Landmark. The Landmark does not have clear boundaries and gets marked by terminative.

(3) Udmurt dunne 31.03.2010 (Arkhangelskiy 2018)
Tulki̯m-jos *vi̯l-ti* *kat'er-en* *Vajobi̯ž* *kar* *ńimaśk-iś* ***gureź***
wave-NOM.PL top-PRL motor.boat-INS [name] city name-PRS.PTCP **mountain**
dor-oź *širja-zi̯.*
vicinity-TERM wander-pst1.3pl
'They went [lit. wandered] with a motorboat along the waves up to the mountain that gives city of Vajobyzh its name.'

The proposed explanation generalizes over the previous analyses, as all the proposed “limits” (spatial, temporal, and scalar) can be seen as instances of a more universal tendency of grammatically coding similar conceptualizations in a unified manner.

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Whether the macro-event hypothesis can solve the“Core dispute” of Chinese verb-complement structure

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Key Words: Verb-Complement Structure, Core dispute, Macro-event Hypothesis, Syntax Core, Semantic Core

Talmy (2000a, b)'s dichotomy of language types is based on the encoding characteristics of the core schema "path" concept of motion events in different languages, and the attribution of the representation patterns of Chinese "path" components has always been controversial, with "V/S/E-type" having their own reasons. The source of this controversy is the core of the verb-complement structures in Chinese, "pre-core, post-core, dual-core, and non-core". The Chinese verb-complement structure is highly inclusive, and many specific internal phenomena need to be specifically analyzed. Many linguists proposed to distinguish the concepts of "syntactic core" and "semantic core". Fan Like (2013) demonstrated the feasibility the distinguish through the analysis of displacement event expression. Based on Talmy's macro-event concept, Li Fuyin (2019,2020) further proposed the "macro-event" hypothesis. Can macro-event hypothesis deeply solve the core dispute? By analyzing each viewpoint, it can fully verify the explanatory power of macro-events and further promote the specific scheme of the theory.

"xuehui, tingdong" is a type of "achievement event", the main event "hui, dong" is the achievement of the goal and the core of meaning, while the co-event "xue" and "ting" is the way to achieve the goal. The arguments governed by the main event and co-event are consistent.

"State change events" such as "tiaogao, yanxian" , the "tiao, yan" express behavior which represent the way and reason of events, are the core of syntax and co-events. The "gao, xian" express new state appearing which brings new information, is the core of semantics and the main event. The arguments dominated by main event and co-event are inconsistent, and the arguments of the main event appear unmarked.

Activities such as "xiaku, dasui" is causing event, "xia, da" are causative factors and co-events, and action verbs are the syntactic core at the form level. State changes such as "ku, sui" are the main information of the expression, is the main event. The argument realization of the main event and co-event has a clear division of labor.

"Causing events" such as "zhuilei, tiaofan" have unique arguments for co-events, while the arguments for main events may not be unique, which leads to multiple interpretations.

The distinction between "syntactic core" and "semantic core" is the intrinsic characteristic of macro-event theory. When "syntactic core" and "semantic core" are combined, it is a single event. When they are borne by different words respectively, a single event becomes a macro-event, one is always the main event and the other is the co-event.The loosest way to correlate the main event and co-event is connective words, while the simplest way is to juxtapose the core components of the event. The main event is always the meaning core, and the co-event is always the syntactic core. In the absence of the marking of associative components, the most natural order is the logical and temporal order. The co-event always precedes the main event, the contrary is not possible.The main event is a foreground event, and the co-event is a background event. The main event is new information, and the co-event is old information. The main event is the information focus and the co-event is the information source.

The Greek FrameNet project: populating and interlinking a lexical resource

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Keywords: FrameNet, Greek, semantics

Over the last decades, NLP researchers have long sought to develop resources tailored to build meaning representations beyond the levels of lexis and syntax. Even today, with the advent of large language models, the need for semantic knowledge that might be useful for various end-user applications is more than ever imperative. One step beyond, artificial agents are still lacking and thus, call for cognitive-based language representations. In this respect, framenets, that is, semantic lexical resources that have been developed for many languages after the renowned Berkeley FrameNet (BFN) for the English language (Fillmore and Baker, 2010; Fontenelle, 2003) are more than welcome. Based on the principles of Frame Semantics (Fillmore 1976; 1982), a cognitive approach to semantics, and organized around frames, rather than words, BFN is a cognitive-based resource that builds on two interfaces: the syntax-semantics interface, and the corpus-lexicon one. More recently, the Global FrameNet initiative (Torrent et al. 2018) seeks to address questions following the development of framenets for languages other than English, and to provide a multi-lingual workbench including parallel corpora and tools for the alignment of framenets in various languages.

The proposed paper describes work still in progress aimed at (a) developing a Greek FrameNet, (b) aligning it to BFN 1.7 at the frame level and (c) linking it to an existing Greek semantic lexicon. To do so, we opted for creating our resource from scratch and then aligning/linking it with external resources manually; moreover, our approach to lexicon building was a modular one, in that we considered specific domains (i.e., finance) and semantic fields (i.e., cognition, communication) as our starting point. Following the specifications already set by BFN, lexicon development is based on corpus evidence. In this regard, Greek verbs and nouns (both single- and multi-word ones) in the selected domains/semantic fields were manually extracted from corpora and then grouped together based on their meaning. As expected, word sense disambiguation was performed in the case of polysemous predicates resulting, thus, in the determination of the Lexical Units (LUs) of the respective frames. Greek frames were, thus, created from scratch; consequently, these frames were further populated with more LUs where appropriate. Syntactic/semantic considerations were also detailed in view of corpus evidence. To this end, a corpus specifically created for accompanying the final lexical resource was created; semantic role labelling was, then, performed manually by trained linguists.

In the paper, we will present the lexical resource in terms of the Database developed and its contents, the methodology employed towards lexicon creation and annotation, and the results obtained thereof. We will then discuss cross-lingual considerations that arise from our attempt to align the Greek FrameNet to BFN. The focus will be on the steps taken towards linking the Greek FrameNet with the semantic dictionary of Modern Greek.

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The study of inclusive language in written Spanish: A prototype-based approach

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Keywords: prototype theory, inclusive language, Spanish, generic masculine

In this research we will depart from the hypothesis that if we are taught when we are youngsters that the plural is made by the generic masculine, we are going to tend to use it more even when you make the decision to use inclusive language because that is the knowledge we have acquired. For that reason, we will study inclusive language from a theoretical approach based on prototypes. As it is known, such theory explains the categorization of things in our brain depends on human cognition and therefore it postulates that some members are more representative than others (Croft & Cruse 2004; Serrano 2011) and we believe it is the case for inclusive language in written Spanish. We have come to this hypothesis while analyzing the examples from our corpus and realizing that in many of them the use of inclusive language is not complete, as concordances are not categorical. This is the reason why we aim to explain the use of some of the concordances when it is used and also the word order of the different variants in order to explain why these uses are not maintained in the discourse. For example, in (1) and (2) we observe the plain variant -a/-o in one sentence but the used of inclusive language is not detected in "los difamadores" or "veteranos, locutores" when it could be used, and it should be used if we try to have a complete use of inclusive language. It is also the example (3) because there is not a reduplication of the word and it is also our aim to explain this variant.

(1) En estos días he recibido tanto apoyo que **los difamadores** deberán redoblar su esfuerzo para taparlo. ¡Gracias a **todas y todos!** Me siento verdaderamente abrumada. Con cosas así una piensa que todo este viaje ha valido la pena, pese a todos los pesares. ¡Les mando un fuerte abrazo!
'These days I have received so much support that the slanderers will have to redouble their efforts to cover it up. Thanks to all of you! I feel truly overwhelmed. With things like that one thinks that all this trip has been worth it, despite all the regrets. I send you a strong hug!'

(2) Por los estudios han pasado **alumnas y alumnos** de distintos cursos y han sido entrevistados por nuestros, ya **veteranos, locutores**
'Students from different courses have passed through the studies and have been interviewed by our, now veterans, presenters'

(3) Ser **culto/a** no tiene que llevar aparejado tener sentido común, bondad, racionalidad ni ninguna otra característica positiva en el ser humano. La acumulación de conocimientos es un arma y las armas se pueden utilizar bien o mal.
'Being educated does not have to come with having common sense, kindness, rationality or any other positive characteristic of a human being. The accumulation of knowledge is a weapon, and weapons can be used for good or bad.'

We will also explain the reluctance of some linguists to the use of inclusive language in Spanish (RAE 2020; Guerrero Salazar 2022). For this purpose, we analyze real examples in the written language extracted from a linguistic corpora from social media and newspapers samples. These examples are analysed by the Rbrul (Johnson 2009) program which helps us achieve the quantitative and qualitative methodology.

The results obtained will show that the generic masculine is still prototypical in the uses in Spanish, and, even when it is used in the inclusive language, the concordances in the whole discourse are not correct and tend to pass to generic masculine.

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I see what you are trying to do. Siehst du, der kann schon Englisch. Investigating metaphor acquisition in German-English bilingual children

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Keywords: metaphor, language acquisition, bilingual language acquisition, primary metaphor, Conceptual Metaphor Theory, conflation

How do children acquire metaphorical meaning? A natural assumption is the Metaphorical Extension Hypothesis (Johnson, 1999), i.e. children learn the literal sense of an expression first, and later on extend it metaphorically, assuming that the literal sense is more basic than the metaphorical one (e.g. Clark, 1973, Sweetser, 1990). In contrast to this, Johnson's (1999) Conflation Hypothesis suggests that children learn metaphorical expressions from contexts where both, a literal and a metaphorical meaning applies, and only later learn to differentiate the metaphorical sense from the literal one. For the verb *see*, Johnson observed that adults in child-directed speech regularly use this word as in (1), which is an example from our corpus:

(1) *I see what you are trying to do but I won't let you*. (uttered by father to son)

In (1), the child's father visually *sees* what the child is doing but he also *understands* the purposes of the child's activity. If such ambiguous, conflated, uses are frequent in adult speech directed at children (as suggested in Johnson, 1999), this could indicate that children learn the conflated form first (rather than learning the literal meaning first and then extending it metaphorically). Given the Conflation Hypothesis, children should produce conflated uses of *see* early on. Alternatively, given the Metaphorical Extensions Hypothesis, children should produce literal uses first and only at a later stage should start to produce metaphorical uses of *see*.

In the following study, we are going to investigate German-English bilingual children's acquisition of metaphors in two highly dense corpora (corpus of child 1: age = 2;3 to 3;11 (21 months), *n*= 47,812 child utterances, 180,293 caregiver utterances; corpus of child 2: age = 2;3 to 3;9 (18 months), *n*= 37,995 child utterances, and 193,993 caregiver utterances). We specifically want to focus on the acquisition and use of the verb *see* in the children's output as well as in the input from caregivers. In line with the Conflation hypothesis, we expect conflated uses of *see* to be highly frequent in the input and as a consequence of this to be produced very early in the children's output. Apart from this, we will investigate how bilingualism factors in: Do bilingual children behave like monolingual ones (with Johnson, 1999, as a reference study for an English monolingual child)? Does acquisition of conflated uses of *see* in English influence production of its German equivalent *sehen* and vice versa?

If the Conflation Hypothesis proves to be more appropriate than the Metaphorical Extension Hypothesis, this would provide support for Primary Metaphor Theory (Grady, 1997) arguing that metaphorical meanings stem from correlations in experience made frequently and from very early on in life.

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We're entering a housing bubble*, while leaving our pandemic* bubble: Changing meanings of *bubble* in relation to the outbreak of COVID-19

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Keywords
bubble, conceptual metaphor, polysemy, image schema, Coronavirus corpus

Motivated by Charteris-Black's (2021) observations on changing meanings of COVID-19 related linguistic expressions, this study aims to show that the extended uses of the polysemous lexical item *bubble* are significantly accounted for in the COVID era by exploring attested data in the Coronavirus corpus. It then argues that the changing meanings are metaphorically motivated (Lakoff 2006[1993]) by elaborating how the conceptual motivation helps obtain the intended construal. A usage-based investigation confirms that changing meanings of *bubble* are significantly correlated with the outbreak of COVID-19, exemplifying how language use is motivated by its underlying conceptualization shaped by the users' embodied experiences.

The lexical item in focus, a *bubble*, prototypically refers to "[a] thin membrane of liquid enclosing a volume of air or another gas" (OED). The semantic radial network of *bubble* has expanded significantly due to the outbreak of the pandemic. This network consists of the two schematic properties: EPHEMERALITY and ENCLOSURE as illustrated in (1)-(2).

(1) The last big jump in sales came almost a decade ago, after the economic downturn from 2007 to 2009 when the U.S. housing ***bubble*** burst.
(2) South Korea is talking with Singapore about opening its first "travel ***bubble***" in July, which would allow vaccinated travelers on direct flights to bypass quarantine.

In (1), on the one hand, the word *bubble* refers to an unstable, and hence, undesirable state of economic activity in the domain of the U.S. housing market. Its construal is conceptually extended via the metaphors ABSTRACT ENTITIES ARE PHYSICAL ENTITIES and SIGNIFICANT IS BIG: Just as the existence of a bubble may not last long and burst, the economic state, which seemed to be booming, collapsed, and will eventually be nullified, which is undesirable. The term *travel bubble* in (2) refers to an extended concept of safe space, which is coordinated by the two partner countries with the similar situation of COVID-19 infections. The term *travel bubble* evokes an enclosed container with boundaries that conceptually fend off those who have been infected. Its construal illustrates another semantic extension via the metaphor STATES ARE BOUNDED REGIONS (Lakoff 2006[1993]: 204): those who are inside the bubble can travel disease-free as they have all been cleared; those outside the bubble cannot.

To collect attested uses of the lexeme *bubble* produced after the outbreak of COVID-19, a total of 4,119 tokens of *bubble*-compounds (X + *bubble* and *bubble* + X) were collected from the Coronavirus Corpus. It employs its collocation patterns because the collocates would reveal their contexts so that they could help efficiently sort out meanings of bubble in the given contexts. The major categories of the *bubble*-compounds are the prototypical sense (Prototypical), the ephemeral nature of bubble (EPHEMERALITY), and the enclosed container with boundaries (ENCLOSURE). This study reveals that those classified as ENCLOSURE category constitute more than two-thirds of the total dataset (74.36%), and the instances all refer to the pandemic bubble. The high proportion of the sense of ENCLOSURE in the corpus supports the premise that real-world experiences motivate meaning changes. Based on the distribution, this paper demonstrates that the radial network of the polysemous lexeme *bubble* has been expanding motivated by real-world experiences via conceptual metaphor and image-schematic construal.

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War-triggered Negative Emotions: the Case of Russia.

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Keywords: cultural conceptualization, conceptual metaphor, emotions

The present research falls within the realms of cultural linguistics and computer-mediated communication (CMC). It focuses on the cultural conceptualizations of negative emotions (anger, hatred, irritation) instantiated in both linguistic (comments) and visual (Internet images, photos) online content produced by Lithuanian Internet-users on a number of Internet forums as a response to Russia's military actions in Ukraine. The importance of CMC for the studies of emotions should not be underestimated, as socially meaningful activities online leave a textual trace making the interactions more accessible to scrutiny and reflection. What is more, the anonymity of CMC, the fact that a person is non-identifiable and unreachable leads to a greater freedom of expression and higher levels of self-disclosure in conversations as opposed to face-to-face interactions.

The study aims at identifying the ways war-triggered emotional responses are conceptualized/categorized within the Lithuanian cultural context through the identification of underlying cultural metaphors.

The ethnolinguistic method with the elements of cognitive and computer-mediated discourse analyses was applied in the research. The collected samples (posts/comments/images; approx. 4000) were analysed in the theoretical framework of Cultural Linguistics, Conceptual Metaphor theory, Extended Conceptual Metaphor theory, as well as the Metaphor scenario theory (Gibbs 2011, Herring 2004, Kövecses 2010, 2015, 2020, Lakoff and Johnson 1980, Sharifian 2017).

The research data revealed a number of negative emotions conceptualizations captured by the following underlying cultural metaphors: Putin and Russians are Criminals (e.g., murders, killers or the Hague's client) with Crime and Criminal Law being the Source Domain. Entertainment, Arts (Literature and Folklore) and Medicine are among other Source Domains drawn upon extensively (e.g., Putin should cure his paranoia; Russians are vampires, orcs, zombies (illustration 1 saying: "Bloodthirsty Russian zombies are drinking their neighbour's blood"); Putin is on the dark side of the Moon (an allusion to Pink Floyd's album), etc.). It is noteworthy to mention that some comments represent multi-media content, i.e., the combination of a text and an image, as in illustration 1; whereas in a number of cases a text or an image would stand on its own, as in illustration 2. Illustration 2 exemplifies the way cultural conceptualizations are realized in art. In this particular case negativity towards Russia is captured by the visual conceptual metaphor Russia is Death; the face of the symbol of fertility, motherhood and Russia, Matryoshka doll, is distorted to represent the skull, the symbol of mortality.

Illustration 1.

Illustration 2.

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Diachronic changes in the production or interpretation of public messages: Focusing on figures of speech in corporate profiles

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Keywords: corporate discourse, diachronic change, figure of speech, audience design

This study examines corporate profiles using annual reports and argues that the production and comprehension of public messages have changed over the last three decades, with a focus on changes in the expressions used in descriptions of products and services, various stakeholders, and companies. Because of their promotional function, the media discourses of companies and universities have been extensively studied from the perspective of critical discourse analysis (Arshad & Shakir, 2014; Bano & Shakir, 2015; Bauer et al., 2013; Fairclough, 2003; Jindřichovská & Eckert, 2021; Leung, Parker & Courtis, 2015). Most existing research in this area highlights the construction or reproduction of social ideology through discourse and explores the linguistic elements that are involved in this process. While the present study acknowledges the implicit features of media discourse, such as promotion, it approaches corporate discourse as a helpful tool for observing the interactions among society, media, and discourse and for understanding shifts in the way people participate in media discourse. Therefore, this study identifies some components of corporate discourse and analyzes how descriptions vary across over time.

The data for this study were taken from Mergent Online and consist of the corporate profiles of ten U.S. corporations that were published from 1980 to 2021. Most companies publish annual reports for stakeholders in the form of booklets or on their websites. Shareholders, investors, and other interested parties are the primary readers. However, anyone with access to the website can read the annual reports. Prior to the 2000s, most annual reports were distributed in paper form and only reached a small audience, but with the introduction and development of the internet, they have become more accessible to a larger audience. Furthermore, societal changes, such as economic conditions and growing environmental awareness, impact companies as well. This study will seek to clarify how these changes have impacted corporate discourse by coding components of corporate profiles and conducting a qualitative analysis of the descriptions (particularly the use of figures of speech) in each component.

The analysis shows that companies' use of broad, general descriptions in the component "products/services" and of reference terms that indicate actors or recipients in the component "contributions" have increased over time. The following examples from Best Buy include product descriptions and descriptions of the relationship between the corporation and its stakeholders. These descriptions (underlined) shift from naming specific products and services in (1) to using words or phrases to summarize those products and services in (2) and (3). The terms for targets (in italics), while they usually refer to customers, have also changed to include broader categories. In (3), the term "lives" can indicate a wide variety of target clients, stockholders, employees, and even non-human entities such as society and animals. Also, in 2021, agents (in bold type) have been moved to the background (for example, "at Best Buy"), and corporate involvement with their actions appears to be less direct.

(1) … **the Company** sells <u>a full line of audio and video accessories and provides after-sale services, such as extended service contracts and installation services</u> (1986 annual report).

(2) **We** improve *people*'s lives by making <u>technology and entertainment products</u> affordable and easy to use (2001 annual report).

(3) At Best Buy, our purpose is to enrich *lives* through <u>technology</u> (2021 annual report).

This study shows that public messages have become more generic and indirect and that these changes result from shifts in the target audience of different types of media, as corporations use media that range from printed media to online publications. The study also shows that, because generalizations blur the distinctions among organizations, it is becoming increasingly important for members of the target audience to actively participate in interpreting corporate messages in order to understand them correctly.

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Are words for objects easier to learn than words for actions?

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Keywords: fast-mapping, eye-tracking, semantics, infants, noun bias, language acquisition

Young children of various linguistic backgrounds have been shown to exhibit a bias towards nouns over verbs during early language acquisition, particularly in production. For example, in a cross-linguistic study (Bornstein et al., 2004), 20-month-old children of various native languages were found to produce more nouns than verbs. Moreover, in proportion, words for objects constitute a larger part of children's early vocabularies compared to adults and older children's (Bloom, 2002). Attempts to explain this bias have been made, proposing that the conceptual difference between verbs and nouns could be the cause (Gentner, 1982). Indeed, in a semantic perspective, most verbs denote actions or events (activities or changes in state) and most nouns refer to objects or people. Concepts for objects could be argued to be easier to grasp than concepts for actions. Alternatively, the bias might be attentional: humans might be drawn more strongly towards objects, or expect speakers to draw attention to objects and not actions most of the time (Bloom, 2002). It has also been proposed that the bias towards nouns could be explained by the different morphosyntactic properties of verbs and nouns in certain languages (called 'noun-friendly'); however, the noun bias seems quasi-universal at least in certain developmental periods and situations (Labertonière & Skoruppa, 2022).

Most studies on the subject focus on the noun vs. verb part of the problem, but we propose to look at this noun bias in a semantic perspective, with an ecologically oriented setting. In our study, we compare word learning in French-learning infants (13- to 20-month-olds) for novel objects (Condition 1) and novel actions (Condition 2), using a fast-mapping eye-tracking method. We present infants with four blocks of two novel object– or action–pseudoword associations in each condition (see Figures 1 and 2 for examples). In the learning phase, infants see a series of 2 different videos of 2 people either looking at an object (Condition 1) or performing an action (Condition 2) while a voice-over names the object / action 3 times. During the following test phase, the two novel objects or actions appear side-by-side with one pseudo-word in two trials. We compare pre- and post-naming looking times towards the target object in the test phase after 3 and 6 expositions (in order to assess possible subtle learning effects).

In our analysis, we will calculate the mean proportion of target looking (PTL) for each trial in pre- and post-naming phases and average it by subject. If children have learned to associate meaning to form in the learning phase, we expect a naming-effect to manifest as an increase in PTL in the post-naming phase. We expect infants to have a bias towards objects rather than actions; therefore, they should perform better in Condition 1. Twenty-seven subjects have currently been tested and data collection is still on the way. We hope to present analyses (logistic regressions) for at least 30 subjects.

Fig. 1: Still of an 'object' video

Fig. 2: Still of an 'action' video

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Schematic semantic conceptualization of English definite noun phrases

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Keywords: definite article, noun phrase, schema theory, cognitive linguistics, generic noun

Traditional syntactic analyses of various uses of English definite articles (or delimiters, as the author prefers to call them) have encountered difficulties due for various reasons, for example, due to their context dependence, suggesting that their usage is not strictly grammatical, and cannot be captured well by traditional grammatical rules. Other problems arise from their ambiguity, for example, indicating definiteness, specificity, or uniqueness, and possible interactions with tense and other grammatical features in certain contexts. Thus, the task of finding a comprehensive theoretical explanation has been challenging, as well as a practical model for language pedagogy.

More promising insights have come from considering the mental representations of such nouns in context, contextual familiarity of noun referents, and how language users conceptualize them. This approach will be extended further in this study to various uses of the English definite article, including levels of semantic concreteness and entitivity, or how a noun referent can be individuated and conceptualized. The basic core function of definiteness can then be extended in various ways to account for various uses in a more coherent manner, including patterns of article usage that have been regarded as idiomatic, sociocultural, or idiosyncratic. This includes usage of 'the' in certain verbal contexts (e.g., play the piano), certain types of locations (e.g., 'going to the store'), so-called unique referents (e.g., the sun), part-whole relations (e.g., 'the computer' leading to 'the mainboard'), 'the' used for first mention of nouns in various contexts (e.g., "At work, the photocopier broke down"). The proposed model will also account for some uses where the definite article is omitted, as in generic-like phrases (e.g., in orbit), and some types of variation (e.g., British 'in hospital' cf. US 'in the hospital').

The model sketched out here provide a more coherent explanation of various uses of English definite forms, in part because the model depends on how referents are conceptualized, schematized, and understood in context. This will not only be more theoretically coherent and comprehensive, but also bears direct language applications to pedagogy and applied linguistics.

Children's construal of intermediary instrumental causal chains from the perspective of event integration

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Keywords: Intermediary instruments, Children, Event integration, Causal chains

Based on two configurations of intermediary instrumental causal chains and inspired by Michotte's (1946/1963) visual causality models, we propose three models of instrumental onset causal chains and two models of instrumental extended causal chains:

IECC1: (Agent → Instrument) → Patient, IECC2: Agent → (Instrument → Patient);

IOCC1: (Agent → Instrument) → Patient, IOCC2: Agent → (Instrument → Patient),

IOCC3: Agent → Instrument → Patient

(Instrumental onset causal chains (IOCC); Instrumental extended causal chains (IECC))

The degree of clause integration will be taken as indicative of the degree of event integration (Givón 2001). According to event integration theories, in both onset causation and extended causation, a whole causal sequence of events may be conceptually integrated as a single macro-event owing to spatial proximity and the temporal sequence between the causing event and the caused event, and syntactically integrated into a single clause-structure construction (Talmy 2000). However, different degrees of spatio-temporal proximity of the causing event and the caused event in instrumental causal chains result in various patterns of event integration. So we hypothesize that the degree of event integration of instrumental extended causal events would be higher than that of instrumental onset causal events. In a video description task, 30 Chinese-speaking undergraduates and 20 Chinese-speaking 7-year-olds are asked to describe what happens in the videos and judge how many events are included in each stimulus.

Finally, (1) Both the adult and children participants' data showed that the degree of event integration for instrumental extended causal chains is higher than that of instrumental onset causal chains linguistically and conceptually. However, analyzing only the verbal encoding, the children group's performance indicates the degree of event integration of different types of causal chains in the following sequence: IECC1>IOCC2>IOCC1>IECC2>IOCC3, showing great deviation. This can be explained based on various theoretical aspects, including metacognition, children's phases of cognitive development, perspective taking, and lexicon. (2) Both the adult group and the children group preferred to use serial verbal constructions to represent either instrumental onset causal events or instrumental extended causal events.

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A Corpus-Based Behavioral Profile Approach on Action Verbs Bào and Pù in Mandarin News Headlines

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Keywords: Mandarin news headlines, behavioral profiles, corpus linguistics

News headlines act as the first impression for readers on any event in the society. In order to cater to market or political interest, the choice of words within the headlines becomes significant because it leaves a space to manipulate readers' ideology underlyingly. The usage of verbs is one way of realizing manipulation. The usages of action verbs Bào and Pù are common examples of Mandarin news headlines nowadays in Taiwan. Based on the definition from the Chinese WordNet, these two action verbs Bào and Pù express similar word senses, i.e., to expose something confidential to the public. In this study, we collect data from the Internet and use the corpus-based Behavioral Profile approach to explore the morphosyntactic contexts of Bào and Pù in the news headlines. Specifically, we examine their usage patterns in three structural conditions: active, passive and middle voice. Passive voice is defined as an overt co-occurrence with passive markers (e.g., Bèi or Zāo); middle voice is defined as a patient-as-subject use without overt passive markers (e.g., Example (1) and Example (2)). We annotate our data by referring to the relevant features discussed in the previous studies at multiple levels and analyze their usage differences using the behavioral profile approach. The distinctive features of these two verbs are summarized in a snake plot as shown in Figure 1. Our results show that Bào often (a) co-occurs with human subjects, (b) takes complements connected to negative events, (c) and carries the passive voice. On the other hand, Pù usually (a) co-occurs with subjects that are technology-related products (e.g., videos or images), and (b) carries the active or middle voice. The contextual features of these two verbs are also supported by the post-hoc analyses. We adopt Cramer's V to examine the effectiveness of our selected features. The statistics suggests that COMPLEMENT, VOICE, and SUBJECT are the top three distinctive features between Bào and Pù. Our comprehensive analysis of these frequently used action verbs can serve as a steppingstone for the future investigation on language and ideology in Mandarin news reports.

(1) Three structural conditions of Bào

a. Táiběi chéng bó huì méi rénqì yìyuán bào shì fǔ shī yā míntuán qiǎngpò cānguān (active voice)

"TAIPEI EXPO lacks popularity, legislator claimed that Taipei City Government pressured civil organizations to visit by force."

b. Dà māoxióng tuántuán jīng bào diānxián! Dòngwùyuán zhèngshí `nǎo bù jùbù yèhuà huàisǐ' (middle voice)

"Giant Panda TuanTuan shocked with seizures! Zoo confirmed "partial liquefaction necrosis of the brain""

c. Táizhōng gōngchē sījī bèi bào `tíngchē mǎi biàndang' bǎ chéngkè liàng chē shàng 10 fēnzhōng (passive voice)

"Taichung bus driver is exposed for "parking aside to buy lunch", leaving passengers stranded on the bus for 10 minutes."

(2) Three structural conditions of Pù

a. Zàn hánjù gǎnyú wājué tícái wēn shēng háo pù 4 yuè pāi hánguó tóuzī yǐngjí (active voice)

"Praise Korean dramas for daring to explore themes, Wen ShengHao reveals that he will shoot a Korean investment album in April."

b. Zhōurì běidōng shī dā dā! Zhuǎn qián liáng shíjiān pù xià zhōu èr kǒng diē pò 20 dù (middle voice)

"Rainy and humid in the northeast on Sunday! It is revealed that it may fall below 20 degrees next Tuesday when it turns dry and cool."

c. Huáwèi bèi pù zài hélán diànxìn shāng wǎngluò cáng yǒu `hòumén'

"Huawei is exposed to have "backdoors" in the network of Dutch telecommunication companies."

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Regular vs. inference-based questions: relevance for the grammar of polar questions in Slavic and in typology

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Key words: questions, Slavic languages, pragmatics, particles, corpus linguistics

The present study considers the category of inference-based polar questions, which was not previously discussed in the literature (see Hölzl 2016). The study shows that the functional opposition of ordinary polar questions and inference-based polar questions is effective in explaining the use of interrogative particles and prosodic patterns in polar questions in Slavic languages.

Inference-based and regular questions have different conditions of relevance. Consider the following examples from Russian:

(1) a. *Sosed* *kupi-l*↗ *mašin-u*
neighbour(M) buy-PST.M car(F)-ACC.SG
'Did the neighbour buy a car?'

b. *Sosed* *kupil* *mašin-u*↗?
neighbour(M) buy-PST.M car(F)-ACC.SG
'Is it that the neighbour buy a car?'

Questions in (1) differ in intonation pattern: in the regular question (1a), the pitch rises on the predicate *kupil* 'bought' and slowly decreases towards the end of the phrase. In the inference-based variety (1b), on the contrary, there is a gradual increase of pitch through the whole phrase, followed by the sharp pitch rise on the final constituent.

The choice of the appropriate construction depends on the cognitive state of the interlocutors. Thus, ordinary questions are asked when the question proposition (QP) is familiar to both interlocutors, which they are mutually aware of. In other words, the speaker has good reason to believe that her interlocutor has more information about the QP and can reliably clarifyits truth values. So, (1a) is relevant if interlocutors have previously discussed the possibility of their neighbor buying a car. On the contrary, inference-based questions are only appropriate when the speaker has no guarantee that his interlocutor shares the QP with her. Inference- based are asked in response to an observed situation or received information and are intendent to clarify a certain aspect of it. So, (1b) is relevant when the speaker and his interlocutor unexpectedly see their neighbor at a gas station, while they were previously sure he had no car.

The cognitive opposition of ordinary and inference-based explains the information structure design in questions. In ordinary questions the focus is always narrow, while in inference-based questions the focus scopes over the entire proposition, since there can be no topicalized constituents in inference-based questions.

The difference between the two types manifests itself grammatically in Slavic languages. Firstly, in the languages with particle *LI* and its cognates (Russian, Bulgarian, Macedonian, Czech), the use of the interrogative particle in inference-based questions is strongly inappropriate in the modern language. Conversely, in languages with *CI*-like particle (Polish, Ukrainian, Belarussian), the particle can appear in both question types. This difference shows that *LI*-particles, unlike its *CI*-counterparts, are strongly associated with the narrow focus.

Secondly, inference-based questions are structurally related to alternative questions. So, in Slavic languages with *LI*-particles the disjunction conjunctions often grammaticalize into the question particles, specialized for inference-based questions, as in (2) where the Russian disjunctive conjunction *libo* is used as a question particle:

(2) *Ty* *libo* *s* *mater'ju* *prišël,* *v* *marazin?*
2SG or with mother(F).INS.SG come.PST.3M in shop(M)
'You have probably come with your mother to the store, haven't you?'

In the talk, I will present other evidence of the relevance of the opposition of regular and inference-based questions to the grammar of polar questions in Slavic languages. In addition tothis I will also argue for the relevance of this opposition to the typology of polar questions.

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Mouthing Constructions as Social Indexes of Gender in ASL Pronouns

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Keywords: sign language linguistics, ASL pronouns, indexes of gender, mouthing constructions, mouthing, translanguaging, semiotics, trans linguistics.

This paper describes a preliminary study that focuses on the nonmanual markers, precisely mouth actions, produced in tandem with pronominal references in American Sign Language (ASL). While it has become a common belief far and wide within the ASL community and the field of signed language linguistics that ASL pronouns are "genderless" or unmarked in terms of gender (Liddell 2000; McBurney 2002; Sakel 2005), this paper provides evidence to the contrary for third-person singular ASL pronouns by way of mouthing constructions. Very recently, mouthing constructions have been observed to serve morpho-phonological, morpho-syntactic, and other linguistic functions across signed languages (Bismath, in press). Rather than taking a stand on the specific linguistic convention that mouthing constructions seen produced with ASL pronouns may be, the author provides evidence these constructions serve as social indexes of gender while presenting rationale as to the significance the presence that such social indexes may have on ASL discourse, especially for transgender and gender non-conforming signers.

In recognizing the reality that Deaf, hard-of-hearing, and hearing ASL signers are often multimodal and multilingual (Emmorey et al. 2008; Allard & Chen-Pichler 2018) the presence of these mouthing constructions seems to result from signers' employment of their full semiotic repertoires. In other words, these mouthing constructions are the result of translanguaging practices in ASL communities (Kusters 2021). Further, using the tenets of sociocultural and trans linguistics, this paper observes that mouthing constructions co-articulated on third-person singular pronouns function as social indexes of gender (Hall & Bucholtz 2005; Zimman 2018; Zimman 2021). In noting this, the author advocates for a moral obligation to recognize the social indexing of gender in ASL pronouns as a mechanism of gender affirmation and potentially gender-based linguistic violence (i.e., misgendering).

In this preliminary investigation, the author conducted analysis of four open-source ASL videos, three of which were produced by Gallaudet University and one by MELIMIRA. While three videos were analyzed in their entirety, the fourth video was analyzed for up to four minutes of content. 20 mouthing constructions tokens co-articulated over third-person singular pronouns were annotated in ELAN using Johnston and Van Roekel's (2012) mouth action coding schema. The findings revealed that complete articulations of M-type (mouthing) mouth actions often accompany ASL pronouns (especially for third-person singular), with some interesting exceptions observed. This study highlights a typical combination where the manual pronominal reference is unmarked in terms of gender, but the mouthing construction completely articulates the gender of the referent, thereby socially indexing the gender identity of the respective referent. To illustrate this point, Figure 1 shows the most typical example.

The author utilizes sociocultural and trans linguistics principles (Zimman 2017) to argue for the ethical foundation of acknowledging the social indexing of gender in ASL pronouns to prevent linguistic abuse of marginalized communities. This paper offers a unique perspective on the intersection of sign language linguistics, semiotics, and gender studies, beginning the conversation regarding the actual and potential gender-affirming and gender-invalidating language practices that affect transgender, nonbinary, gender-diverse, Deaf, and signing communities. This also brings implications for the need of ASL pronoun acknowledgment, introduction, and practice.

Fig. 1: The most typical example where the signer uses a gender-marked mouthing construction to indicate that the referent of the clause is a man.

MouthGesture F	MouthGesture M
M-type, complete, [hɪz]	His
Socially Indexes	*A man*

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Where is the agent? Insights from an empirical study on eye-witness memory expressing agency in German.

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Keywords: syntax, non-agentive constructions, cognitive sociolinguistics, semantic role, ergative verbs

Our mind is constantly integrating sensed stimuli with assumptions stored in our long-term memory, commonly accepted into our cultural background (Ansorge & Leder, 2011; Myers et al., 2005) and language becomes a tool to construct reality (Langacker, 2015; Tomasello, 2003). Different syntax constructions due to diverse language systems open a window into human cognition and the expression of different socio-cultural realities (Fausey & Boroditsky, 2010, 2011). Joint action gives language users the choice of various constructions to describe the same situation (Croft, 2009). Therefore, an investigation of the connection between human cognition and grammar, the agency expression in German in unintrinsically spontaneous and uncontrollable events such as accidents or mishaps (Kemmer, 1993) was operationalised. In some languages, such as English, more agentive constructions are used when describing such events.

In contrast, other languages, such as Spanish, prefer the usage of non-agentive intransitive constructions erasing the semantic role of an agent (Fausey & Boroditsky, 2010, 2011). In German, speakers focus on the patient that is affected by the event rather than on an active agent (Lasch, 2016) by forming a sentence with a non-agentive intransitive construction (e.g., "Die Vase fiel herunter.") (Auer, 2013; Schäfer, 2018). This entails cognitive effects starting with the focalisation of the observer's attention on the object involved (Lasch, 2016; Wilson, 2016). This study explores the expression of agency in witnessed mishaps, expecting that German native speakers would construct agentless sentences with intransitive verbs when describing an unintrinsically spontaneous and uncontrollable event. An off-line quasi-experiment was designed to gather qualitative data on syntax construction (Eifler & Leitgöb, 2019). In this experiment, 63 native German speakers watched a muted video showing a mishap. The provided written descriptions by the participants were then analysed using content analysis methods (Mayring, 2007) and discourse analysis (Bendel Larcher, 2015), which supplied 43 sentences describing the same event with different grammatical constructions and semantic content.

The results show that most participants tended to form agentless sentences with a patient focusing on the commutation of the object involved. The syntactical constructions of these native German speakers included ergative verbs, verb function structures and verb-adjective combinations without an agent to allow the observer to distance themselves from the unanticipated event (Ágel & Hennig, 2010) and underline the commutation (Lasch, 2016). These linguistic patterns might support the theory of construction grammar, where form and meaning are specifically combined (Goldberg, 2006). The findings after data analysis might be used to reinforce the idea that there may be cognitive effects resulting from the preference for different linguistic constructions caused by different socio-cultural backgrounds (Croft, 2009; Fausey & Boroditsky, 2010, 2011). Furthermore, these possibilities of syntax constructions suggest significant insight for linguistics, but also other disciplines, such as economy, natural science or the law.

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A Study on the Semantic Preference of English Near-synonymous Suffixes through Linguistic Motion Chart

—— taking “-proof” vs. “-resistant” as an example

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Keywords: near-synonymous suffixes, semantic preference, diachronic study, linguistic motion chart

Abstract:
Previous studies on constructional alternations mainly focus on lexical, syntactic or discoursal levels. According to Goldberg’s (1995) classical claim that “it’s constructions all the way down”, this phenomenon should apply to lower levels (e.g.: affixes) as well. On this account, this study explores the variation and changes in frequency distribution and the semantic preference of the nominal stems of two near-synonymous suffixes *-proof* and *-resistant* both diachronically and synchronically based on COHA (1820-2019) and GloWbE corpora. The results are visualized by static linguistic motion chart, through {ggplot2} package in R, following Primahadi-Wijaya-Rajeg and Rajeg’s (2018) tradition.

It is shown that in all English varieties, these two suffixes display a distinct division of labor: *bullet-proof* is the most frequently used adjectival compound, followed by nouns related to costumes or means of transportation, whereas *-resistant* mainly collocates with medical and biochemical nominal stems such as *drug*, *antibiotic* and *methicillin*. In American English, the frequency of N-*resistant* increases sharply during the past 20 to 30 years, and it may well become a substitute for N-*proof* compounds in the near future. In other English varieties, due to geographical and sociocultural factors, the nominal stems collocating with these two suffixes boast some unique regional features. For instance, *rabbit-proof* is predominantly used in Australian English, so it is with *earthquake-proof/resistant* in New Zealand English, *fool-proof* in Indian, Kenyan and Singapore English, and *moisture-proof* in Hong Kong English. Apart from American English, in the other 19 English varieties, the type and token frequencies of N-*resistant* are still both relatively low, which displays their conservativeness in language use. Whether they may undergo “Americanization” in the near future remains to be further observed.

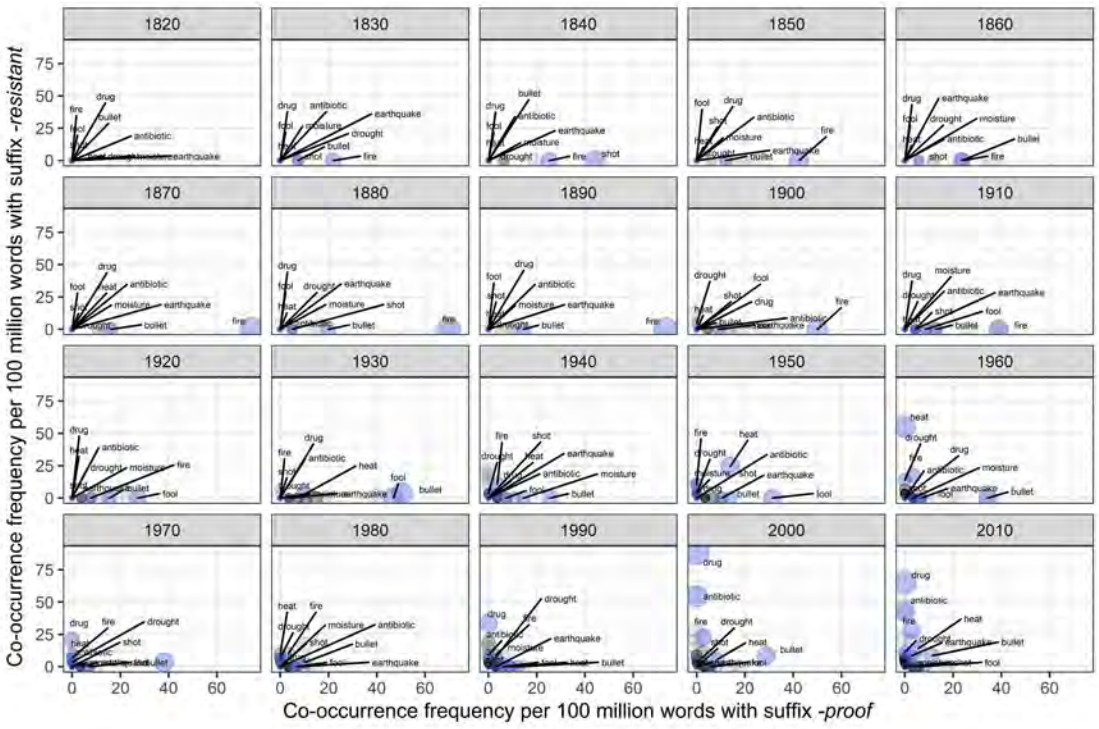

Figure 1 Frequency distribution of nominal stems cooccurring with "-proof" and "-resistant" in COHA (1820-2019) (excluding two outliers "water" and "methicillin")

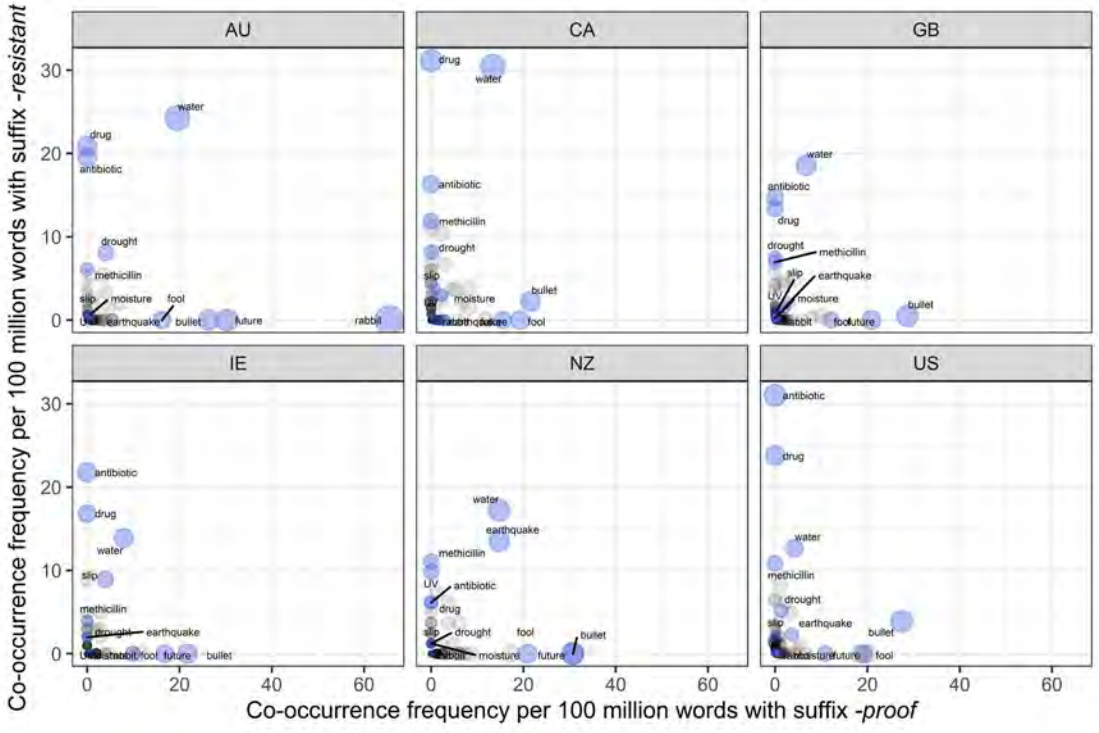

Figure 2 Frequency distribution of nominal stems cooccurring with "-proof" and "-resistant" in six inner circle countries based on GloWbE corpus

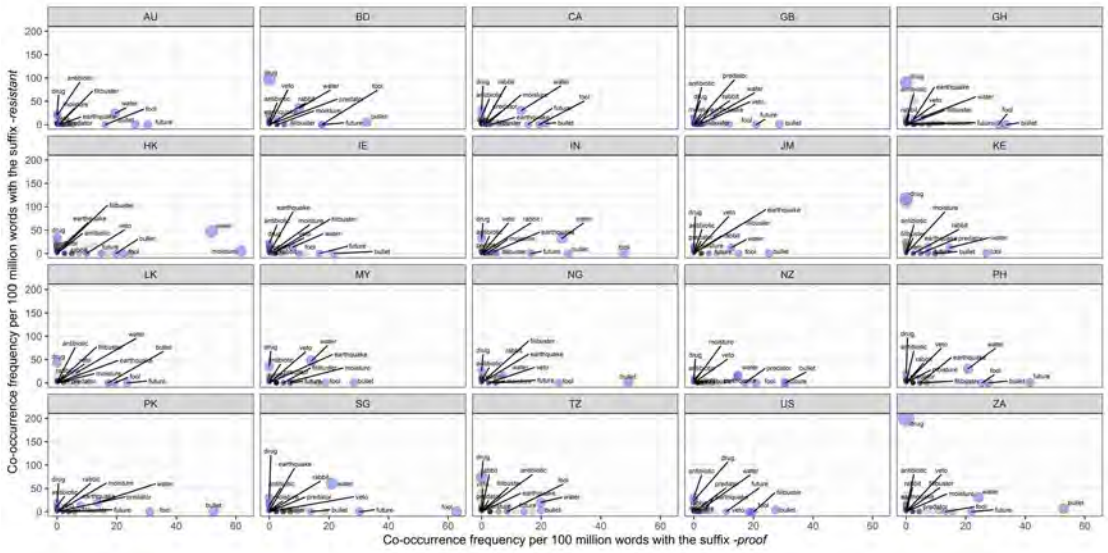

Figure 3 Frequency distribution of nominal stems cooccurring with “-proof” and “-resistant” in 20 English varieties based on GloWbE corpus

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The SocioFillmore Project: Frame Semantics for Critical Analysis of Societal Perspective Taking

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Keywords: U-semantics, interpretative frames, critical discourse analysis, social framing, frame semantic parsing, computational modeling

Different linguistic expressions can conceptualize the same event from different viewpoints by emphasizing certain participants over others. Semantic frames as proposed by Fillmore (Fillmore, 1985, 2006) are a helpful theoretical and practical device for modeling linguistic perspective-taking. In this contribution, we will bridge the gap between the cognitive-linguistic notion of framing and the societal/discourse analytic notion of framing.

To do this, we go back to Fillmore (1985)'s idea of *U-semantics* ('semantics of understanding'), in which frames are not just lexicographical or analytic entities, but interpretative devices that play a central role in the language understanding process. In particular, Fillmore sketches out an inferential thought process that is in some ways analogous to Gricean pragmatic inference, yet takes place on the level of conventional meaning: language interpreters continuously implicitly ask themselves why the speaker would choose one linguistic form over another, and why the linguistic categories represented by these forms exist in the first place. We propose extending these questions with a social-critical dimension: taking meaning to be grounded not only in cognition but also in society, we ask what a speaker's choice for one linguistic form over another tells us about their societal viewpoint on the scene that is being envisioned.

Within this theoretical framework, we propose a methodology for analyzing how societal power imbalances and in/out-group relationships (e.g., between men and women, immigrants and non-immigrants, car drivers and pedestrians) are reflected in language use, based on an analysis of semantic frames and roles as encoded in FrameNet together with syntactic construction annotations. In our contribution we will show our work of applying this methodology to analyzing news reporting of gender-based violence (femicide), road danger (car crashes), and migration.

Finally, we will discuss the suite of computational tools that we have developed around our theoretical approach: we make use of frame semantic parsing to analyze and make accessible corpora of newspaper text linked to event metadata and provide an interactive toolkit for prototyping event-based social frame analysis, released as the SocioFillmore web app. Our toolkit is multilingual but for now focuses on Italian, English, and Dutch. This toolkit is then the basis for follow-up work that goes beyond frame analysis and looks at how different linguistic choices can influence perception of responsibility for gender-based violence, and tries to computationally model this both from an analytic (predict perception scores given a text) and synthetic (generate alternative framings of the same event) perspective.

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The Equi-complexity vs. Typology: Measurement of Overall Linguistic Complexity and Typological Categories[1]

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Keywords: linguistic complexity, Shannon entropy, linguistic typology

This research proposes an information theory-based method to measure overall linguistic complexity and demonstrate the similarity of the linguistic complexities of three major typological categories: the agglutinative, fusional, and isolating. Over the last century, most linguists have believed in the equi-complexity of language: "the equi-complexity dogma is that the total complexity of a language is fixed because sub-complexities in linguistic sub-systems trade off. Accordingly, simplicity in some domain A must be compensated by complexity in domain B, and vice versa" (Kortmann and Szmrecsanyi, 2012, p. 7). However, linguists have not yet reached a consensus on how to measure linguistic complexity (Bentz et al., 2022), let alone verified whether the equi-complexity of language is universally applicable. To fully assess the complexity of language, we first need to develop a method for measuring complexity, which is one of the goals of this research.

This research defines language as “a communication between the speaker and hearer” and “a message is ‘complex’ if it has a large information content” (Joula, 2008, p. 6). This definition is compatible with the concept of Shannon entropy (Shannon, 1948). According to information theory, the complexity of language is high if what unit will appear next in a text is more unpredictable.

The following method is used for the simultaneous measurement of complexity in multiple subdomains of languages (e.g., characters, phonemes, morphemes, words, and constructions). The first step is to calculate the average entropies per unit, which are given by the following formula: $\frac{1}{n}\sum_{i=1,j=n}^{l-n+1,l} p(x_{ij}) log_2 p(x_{ij})$. x_{ij} refers to a string consisting of n units from the ith to the jth one in a text with l units, and $p(x_{ij})$ refers to the probability of how frequently the string appears in the text, from $n = 1$ to the smallest n for which all the strings with n units occur only once in the text. The second step is to obtain the power exponent of the result of the first step regressed on the power law. The first and second steps are done for each subdomain in question, from which we can obtain a value for one subdomain. Then, a vector that consists of these values is given, which simultaneously describes multiple aspects of a text. As Deutscher (2009) stated, a vector form is required to describe overall linguistic complexity. Therefore, one vector is given for one text. The third step is to standardize each value of all the given vectors from the first and second steps into its average of 0 and its variance of 1, as well as to obtain the principle components with Principle Component Analysis (PCA). The advantage is that this method can take into account multiple aspects of language, such as morphological sequence, word sequence, and grammatical sequence.

This pilot study focuses on three languages—English, Japanese, and Chinese—as examples of fusional, agglutinative, and isolating languages, respectively. The data consist of 27 translated excerpts from three versions of the New Testament: the American Standard Version, Kougoyaku (Japanese spoken-style translation), and the Chinese Union Version. The results showed that although the Chinese excerpts reflect some degree of unique behavior, there seems to be no significant difference among those languages, which suggests that the idea of equi-complexity is universally applicable, even among languages with different typological categories.

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Expressions of intentionality and inter-speaker agreement: English speakers show less convergence and certainty in their constructional choices than Spanish speakers

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Keywords: semantic typology, causation events, intentionality, Spanish, English

Languages differ in the number and types of constructions they proffer to their speakers for expressing intentionality (e.g., Shibatani & Pardeshi 2002). English and Spanish are a case in point (Filipović 2018): Spanish features five different constructional types, while English provides three (as exemplified in Table 1, adapted from Gibbons 2003). While these formal differences are well-known, the semantic differences between constructions and across languages still need to be understood better. In particular, the factors involved in speakers' decision-making on which construction to use when describing an event warrant more in-depth investigation.

We therefore investigated which constructions native English and Spanish speakers choose to describe a given set of events, and on what basis speakers might make their decisions. Moreover, we explored how much speakers agreed in their choices, and how underlying conceptualisations might be responsible for the findings. A picture story consisting of 32 black and white illustrations was created (Nilsson 2021, see Figure 1 for examples), providing the non-verbal stimuli for the elicitation of event descriptions. Based on a model of intentionality, which drew upon both previous literature on intentionality as well as the cognitive-semantic modelling framework UER (Schalley 2004), the illustrations were created such that each of the Table 1 constructions was expected to be elicited comparably often.

Ten English and ten Spanish native speakers were (i) presented with the illustrations in a set order and asked to orally describe what was happening on each one in turn, (ii) requested to order the illustrations so that they formed a coherent story and to retell that story, and (iii) queried about specific illustrations and the constructional choices they made in their description of the displayed events. Speakers created more than 60 descriptions across tasks (i) and (ii), i.e., more than 1200 event descriptions were collected and annotated. Descriptions were categorised into above constructional types, and with the help of the UER model and the results from (iii), their cognitive-semantic features were identified.

The findings show that the Spanish speakers display a substantial inter-speaker agreement and demonstrate more consistency in their constructional choices than English speakers who display more variance (as seen in Figure 2), notwithstanding that Spanish proffers more constructions from which to choose. Moreover, English speakers appear to be less certain about their choices, as more of them changed their constructional choices in hindsight, when queried about their choices and the underlying event conceptualisations. The cognitive-semantic differences found across the eight constructional types were identified, allowing us to isolate factors involved in speakers' decision-making on which construction to use as well as explain why English speakers appear as less consistent in their choices than Spanish speakers.

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Tables and Figures

Table 1. Degrees of intentionality (descending from high to low)

Spanish constructions	English constructions
1A. *Rompí un coche* 'I broke a car' (active) 2A. *Rompieron un coche* 'They broke a car' (3pl active) 3A. *Un coche fue roto* 'A car was broken' (true passive) 4A. *Se me rompió un coche* 'It happened to me that a car broke' (reflexive pseudo-passive with dative of interest) 5A. *Se rompió un coche* 'A car broke' (reflexive pseudo-passive)	1B. *I broke a car* (active) 2B. *A car was/got broken* (passive) 3B. *A car broke* (inchoative)

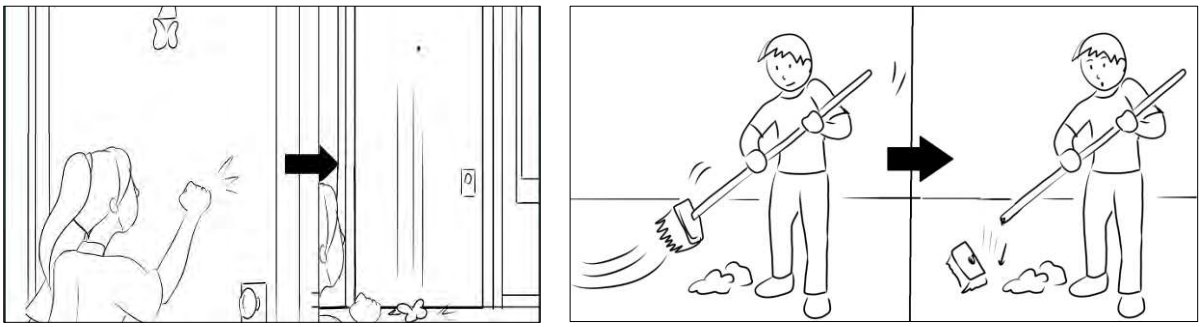
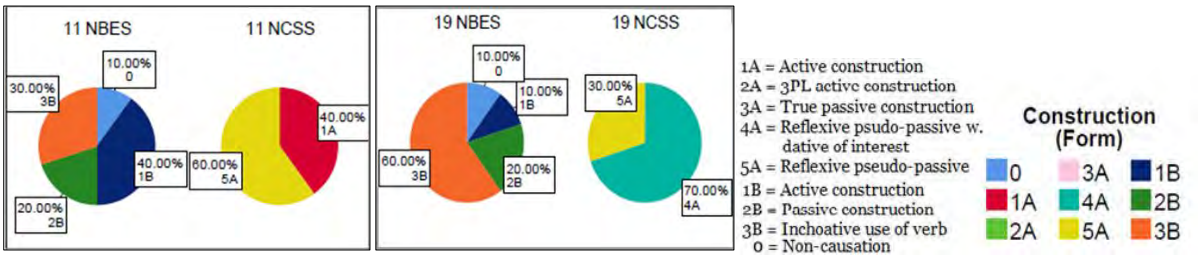


Figure 1. Example illustrations (nos. 11, 19)



NBES=native British English speakers, NCSS=Native Castilian Spanish speakers

Figure 2. Distribution of constructional types for the example illustrations (nos. 11, 19)

Examining the training effects of the maze task for native language development.

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Keywords: Linguistic Training, Maze Task, Brazilian Portuguese

This paper aims to report a study that investigated the effects of linguistic training with a maze task on high school students' knowledge of a low-frequency construction of their native language. Recent psycholinguistic evidence suggests that repeated exposure to this type of structure can modify knowledge and behavior in relation to them (Wells et al., 2009; Fine et al., 2013; Fraundorf & Jager, 2016). More specifically, processing those constructions repeatedly seem to lead speakers to adapt their syntactic expectations and reduce their processing disadvantage. Enkin & Forster (2014) have proposed using the maze task as an L2 training instrument that exposes participants repeatedly to linguistic structures in an engaging and playful manner. Considering those previous studies, we investigated whether exposure to a low-frequency construction in the L1 through a maze task used as a pedagogical instrument could facilitate the manner high school students process and perceive it. We analyzed the behavior of 82 Brazilian Portuguese speakers towards different patterns of pronoun placement in acceptability judgment and self-paced reading tasks that were used as pretests, immediate posttests, and delayed posttests. Our intervention was a four-session maze task training with 30 sentences that had third-person object pronouns in enclitic position (e.g., Maria pegou a bola e lançou-a longe/ Maria caught the ball and threw it far away). This structure has fallen into disuse in Brazilian Portuguese and is usually acquired later in life through schooling (Kato; Cyrino & Corrêa, 2009; Nunes, 2015) since it is more recurrent in formal variants of the language. Our results indicate that the students who underwent the maze task training had a significant improvement in terms of acceptability rates for the trained structure from the pretest to the immediate posttest ($p<.001$) and from the immediate posttest to the delayed posttest ($p<.001$). However, there was not a significant difference in the self-paced reading task, neither on the target nor on the spillover region. We interpret that the repeated exposure to sentences with third-person object pronouns in enclitic position in a ludic activity that requires engagement and attention led speakers to become more familiarized with this construction, which can be taken as evidence that the maze task has the potential to be beneficial to native language development. We also discuss how conducting the self-paced reading tasks in group sessions with teenagers may have accounted for our results in terms of reaction time.

Examples

Target sentences

Third-person object pronoun in enclitic position:
Maria pegou a bola e **lançou-a** longe
Maria caught the ball and **threw-it.ACC** far
*'Maria caught the ball and **threw it** far away'*

Control sentences:

Third-person object pronoun in proclitic position:
Maria pegou a bola e **a** ***lançou*** *longe*
Maria caught the ball and **it.ACC threw** far
*'Maria caught the ball and **threw it** far away'*

Third-person subject pronoun used as object in enclitic position:
Maria pegou a bola e **lançou ela** longe
Maria caught the ball and **threw it.NOM** far
*'Maria caught the ball and **threw it** far away'*

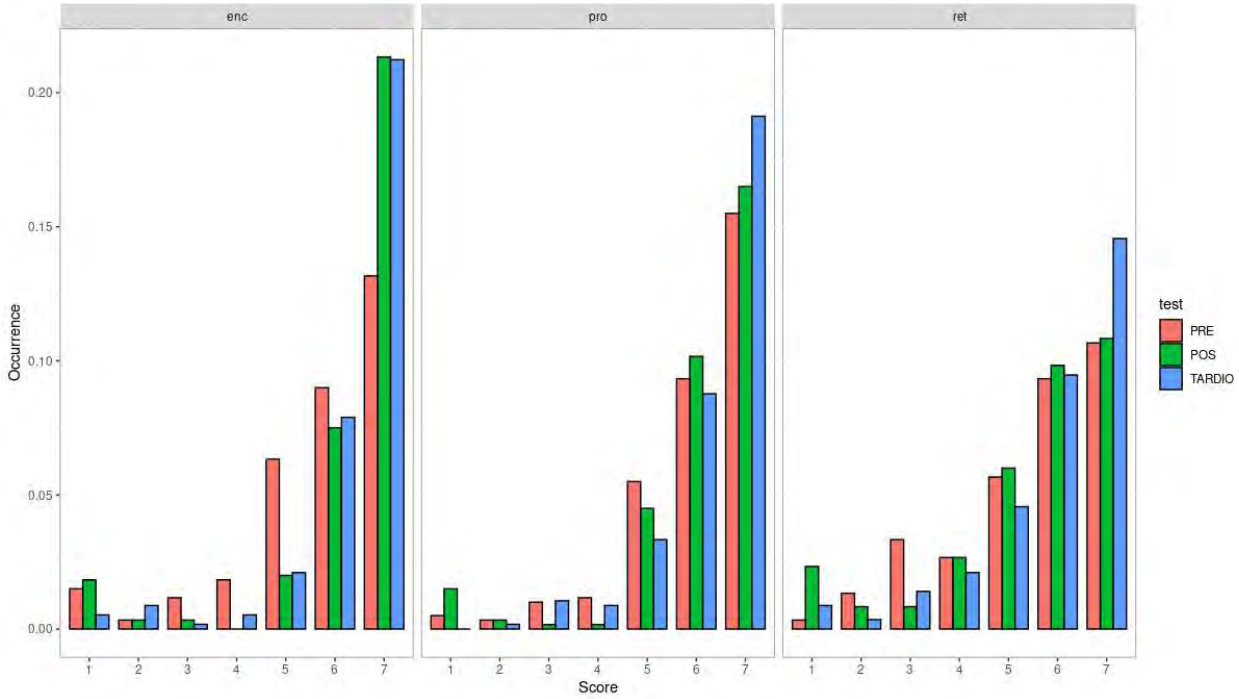

Figure 1: Acceptability judgment for object pronouns in enclitic (enc) and proclitic (pro) position and subject pronouns in enclitic position (ret) in prettest (pre), immediate posttest (post), and delayed posttest (tardio).

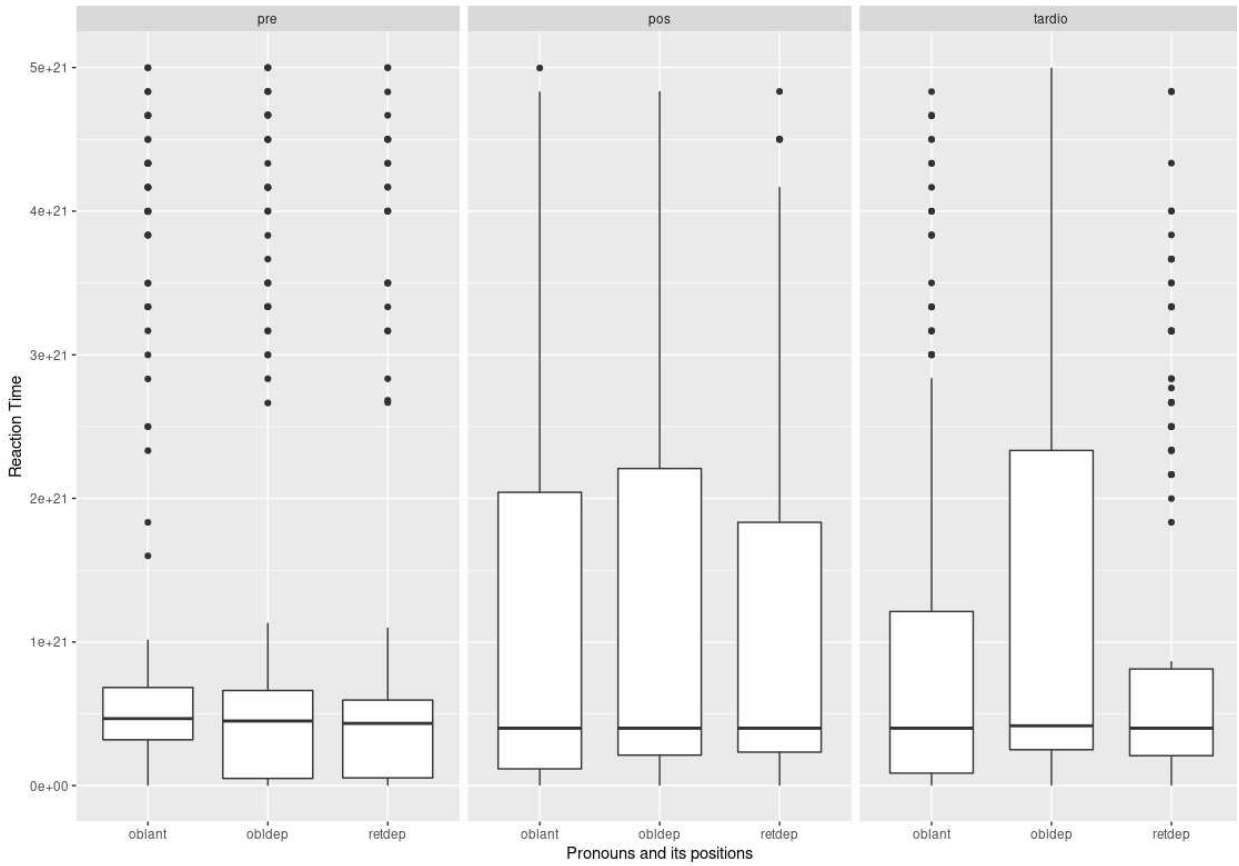

Figure 2: Target reaction times in self-paced reading task for object pronouns in enclitic (oblant) and proclitic (obldep) position and subject pronouns in enclitic position (retdep) in prettest (pre), immediate posttest (post), and delayed posttest (tardio).

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Paths and airways:
A frame-based representation of spatial concepts in aviation terminology

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Keywords: aviation terminology, spatial concepts, specialized knowledge representation

Any domain of specialized knowledge is defined by various types of categories and conceptual relations that bind them together. However, the rapid development of large lexical resources, such as BabelNet, which includes general language dictionaries and specialized resources such as terminological databases, glossaries, and encyclopedias, has highlighted the need for linking general and specialized knowledge using a clear and precise model.

This idea is not new in the area of specialized knowledge representation, where a number of resources have been developed following the theory of Frame Semantics (e.g. Vintar & Martinc, 2022; L'Homme, Robichaud & Subirats, 2020; Pilitsidou & Giouli, 2020; L'Homme, Subirats & Robichaud, 2016), or its terminological application in the form of Frame-Based Terminology (Faber, 2015; Faber & San Martin, 2011). Unlike traditionally organized specialized resources that define professional knowledge through hierarchically organized data categories, frame-based representations provide a better description of dynamic specialized categories, e.g. activities and processes that can be broken down into steps, which are abundant in technical domains.

AirFrame (Ostroški Anić & Brač, 2022) is a specialized lexical database in which aviation terminology is defined in the form of semantic frames by adapting the FrameNet's methodology (Ruppenhofer et al., 2016) to terminology work. The most significant processes, events, and entities characterizing the domain of aviation are defined by core and non-core frame elements (FEs), lexical units or terms, and relations between frames. A preliminary conceptual modeling of the field, with the Flight as the central event of the domain, is followed by a corpus-based analysis of the most frequent terms. Whereas traditional terminological databases are centered around hierarchically ordered data categories, knowledge bases such as AirFrame allow for expanding the hierarchical structure to chronological and associative relations, especially at the level of frame-to-frame relations. These particularly relate to the *precedes*, *is preceded by* and *see also* FrameNet relations, as well as to those referring to perspective.

This paper describes the representation of spatial concepts in the field of aviation, following the conceptual structure of the relevant frames defined in the Berkeley FrameNet. The focus is put on frame element types as a kind of thematic semantic roles that are a particular feature of the database. Terms related to the frames of Airspace and Aerodrome are given in more detail, with examples of annotated sentences extracted from a specialized corpus compiled within the project. The function of FE types is to organize fine grained, frame specific roles into semantically connected groups, as in the sentence *The trajectory allows the helicopter to continue its flight from the height of the cruise to an altitude of 300 m (1000 ft) above the heliport*., where the FE altitude is used in different FE type positions, i.e. as initial_location and final_location. Multi-word terms are also discussed, with the aim to underline the need for expanding the original FN structure to better accommodate contextual information (Torrent et al., 2022).

The AirFrame database serves as a model for enabling linking lexical resources of different theoretical frameworks compiled for different users. Terminology defined this way could be used in developing domain ontologies or for NLP applications, such as extracting relations from unstructured sources.

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Are apples and oranges being compared? The theoretical difference between idiomatic decomposability and transparency and its empirical investigation in English and Italian

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Keywords: Idioms, decomposability, transparency

Idioms are non-compositional multiword expressions which form a heterogeneous group (Bizzoni et al., 2018); they can be described as "multi-dimensional continua" (Wulff, 2013, p. 279). Two of the dimensions from which idiomatic variation can be described are decomposability and transparency; both are fundamental for characterizing idioms at the syntactic, semantic and conceptual levels. However, their definition varies considerably, as there is no agreement on what exactly the two dimensions describe (Carrol et al., 2018). The first aim of this work is precisely to provide an unambiguous theoretical description of decomposability and transparency.

Decomposability is also referred to as compositionality (Titone & Connine, 1994), analysability (Gibbs Jr & Nayak, 1989), isomorphism (Geeraerts, 1995). We align with Geeraerts (1995) and define decomposability as "a correspondence within an idiom at the syntax-semantics interface" (Maher, 2013, p.67), thanks to which it is possible to identify parts of the syntax carrying parts of the idiomatic meaning (Maher, 2013, p. 44).

Transparency is also referred to by several names: motivation (Geeraerts, 1995), relatedness (Carrol et al., 2018), semantic bridge (Dobrovol'Skij, 2016), comprehensibility (Michl, 2019). Our definition is especially akin to that of Sailer (2021): transparency refers to a synchronic relationship between literal and figurative meaning of an idiom; this relationship serves as the rationale for the figurative use of the idiom.

Following Sullivan (2013), where metaphors and metonyms are described via constructions and frames, the theoretical tools of cognitive linguistics are also ideal for the unambiguous description of dimensions of idiomatic variation. We use the typically decomposable and transparent idiom *spill the beans* as an example. Fig.1 shows that decomposability is a relationship between Construction Elements (CEs) and Frame Elements (FEs; Lee-Goldman & Petruck, 2018): the green links in the figure correspond to mappings between the syntactic (CEs) and semantic (FEs) levels. When such mapping is readily achievable, the idiom is decomposable.

Consider now Fig.2: to model the transparency of spill the beans it is necessary to add a further level of description, as transparency is a conceptual relationship between the idiom's literal and figurative frames considered as a whole. The more evident is the relationship established by the cognitive mechanisms in place, the more transparent the idiom.

The second objective of this work is to complement the theoretical analysis of decomposability and transparency with a more bottom-up perspective. The present study is in fact placed in a broader context, in which a cross-linguistic database of English and Italian idioms that share similar meanings is created (~150 per language). For each idiom, ratings on a 5-point Likert scale are collected for several variables including decomposability and transparency. Thanks to this database, it is possible to integrate qualitative and quantitative analysis, and try to answer the following questions:

a) Is the theoretical distinction between decomposability and transparency mirrored in the participants' ratings?

b) Based on two pilot studies conducted, a positive correlation between the two dimensions is expected: does it have the same strength in the two languages?

c) What roles do decomposability and transparency play when included as predictors in a statistical model? Is there multicollinearity between the two?

Idioms are complex constructions to be studied at the interface between linguistics and cognitive studies: for this reason, we consider an interdisciplinary approach such as the one offered by a cognitive (psycho)linguistics (Espinal & Mateu, 2010) the preferred way to capture their eclectic nature.

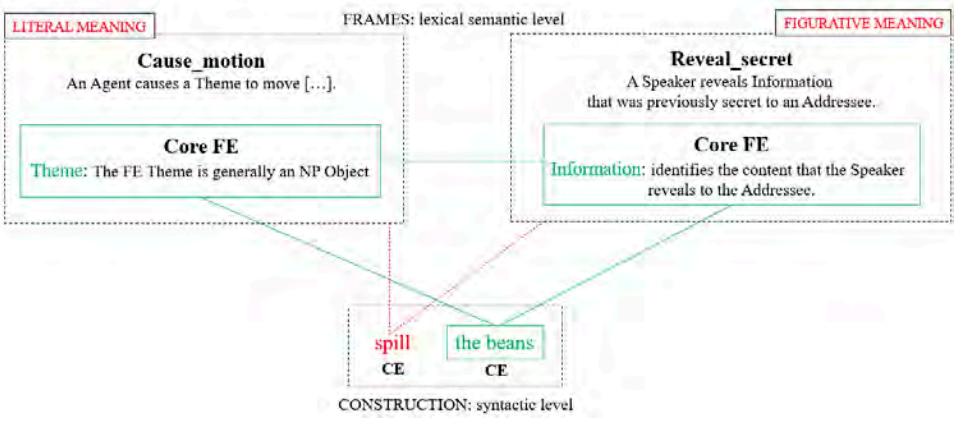

Fig. 1: decomposability of "spill the beans" modelled using CEs and FEs.

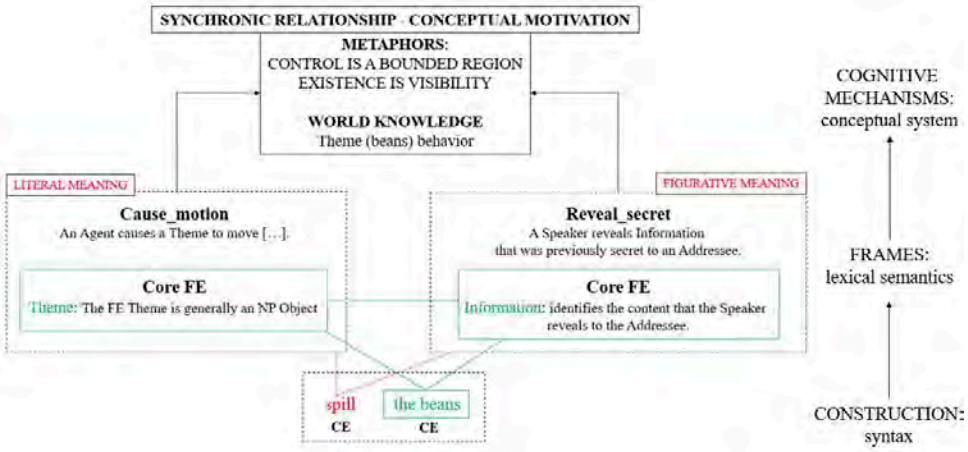

Fig. 2: transparency of "spill the beans" modelled via the cognitive mechanisms (metaphors and world knowledge) of the conceptual system.

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Reconstructing construction networks from patterns in first language acquisition data

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Keywords: cognitive linguistics, constructional meaning, first language acquisition, spatial referential expressions

Due to its prominent occurrence in languages of the world and relevance for the build-up and anchoring of mental representations in early childhood (cf. Lakoff & Johnson 1980, Mandler 2010), the study of the semantics of spatial referential expressions has received much attention within the field of Cognitive Linguistics. Surprisingly, implications arising from findings in children's speech for the development and description of relations within construction networks are rarely taken into account by publications grounded in cognitive construction grammar. Most usage-based models of construction networks tend to underspecify the influence of different cognitive processes that facilitate the build-up and development of linguistic knowledge, oftentimes relying on frequency as a quantitatively operationalizable criterion for measuring the entrenchment of a linguistic pattern – as has been criticized repeatedly (cf. Schmid 2010, Kasper 2022) – and its constructional status. The present research aims to bridge the underspecified gap between the early entrenchment of chunk-like and partially schematized constructions in the construction network of a child and its subsequent development into a highly branched web of constructions varying in schematicity, idiomacity, and productivity (cf. Ziem 2022, among others). Drawing on cognitive constructionist approaches (for an overview, see Goldberg 2013, Langacker 1999), I argue that the cognitive plausibility of a usage-based network model relies on the identification of network root nodes that are stored and schematized from the beginning of first language acquisition, e.g. the onset of entrenchment of linguistic units in early childhood.
This paper presents results from a corpus-study on early pattern-like usage of four positional verbs in children's speech on the basis of spoken language data (the LEO corpus, cf. Behrens 2006), addressing questions raised in previous studies on the acquisition of spatial referential expressions in German (Kutscher & Schultze-Berndt 2007, Bryant 2012, Madlener et al. 2017) that are considered to be of interest in regard to a cognitive plausible description of the semantics of positional verbs and the structuring of verb-specific construction networks. I combined a quantitative approach to identify syntactic patterns occurring in both the input and the child's utterances with qualitative analyses, drawing on metadata as well as overall caretaker-child interactions in order to reconstruct potential constructional meaning. A main objective of the study is to determine whether children acquire a single "core" meaning of a verb as a starting point (cf. Behrens 2003, Theakston et al. 2002, centered around the location of an entity) or different variants of meaning and their corresponding syntactic patterns (including semantically weakened patterns e.g. *X steht auf dem Kopf* 'X is positioned upside down') without necessarily mapping them onto each other (thus serving as initially independent root nodes with separate event-related constructional meaning). First results point to the early emergence of polysemous network structures that encompass partially schematic constructions with abstract constructional meaning (e.g. referring to the informational value of textual elements or correlations between abstract entities) and confirm the profound role of early acquired verb particles (in German) in marking differences in meaning (e.g. *abstehen* 'to stick out, stand off' or *festsitzen* 'to sit tight, to be stuck').

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Introducing the Judgmental Hypothesis of Sensory Relativism: ERP and GSR Investigations of Sentence Processing

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Keywords: Linguistic Relativity Hypothesis, Sensory Relativism Hypothesis, Judgmental Hypothesis of Sensory Relativism

As the Linguistic Relativity Hypothesis holds that language can change cognition, Sensory Relativism Hypothesis (Pishghadam et al., 2016) proposes that senses can influence cognition and emotion. Based on Sensory Relativism, individuals may have no knowledge of certain concepts (i.e., to be avolved), may have some knowledge of the concepts perceived through their senses of hearing, vision, and touch (to be exvolved), and may have comprehensive knowledge of the concepts perceived through their senses of hearing, vision, touch, smell, and taste (to be involved). Thus, the number of senses one has already used for perception and conceptualization can change their cognition and emotion. For instance, those who have eaten "caviar" (involvement) develop different emotions and understandings from those who have just seen caviar (exvolvement). The experimental aspect of this hypothesis has recently been investigated in behavioral and electrophysiological studies on sentence processing. As a result of the behavioral ones, it was deduced that in real-life situations, an increase in the number of senses used for perception (i.e., moving from avolvement to involvement) would lead to improved cognitive processing (Pishghadam & Shayesteh, 2016; Shahian, 2020). Yet, the Event-Related Potential (ERP) investigations conducted in contexts where the participants were supposed to do a sentence acceptability judgment task revealed that more cognitive engagement was required to comprehend sentences with unknown words (avolvement) or remember the details of the words learned through their five senses (involvement; Pishghadam et al., 2021; Shayesteh et al. 2020; Tabatabaee Farani et al. 2020). In a similar study, Pishghadam et al. (under review) reported that for exvolved words embedded in sentences with semantic and pragmatic violations, Galvanic Skin Responses (GSR) were smaller compared to the responses to the involved words. That is, in experimental contexts, more emotional arousal is experienced during avolvement and involvement, which is associated with increased cognitive engagement.

The overall conclusion of all the conducted studies was that the influence of senses on cognition and emotion might change in degree according to the context individuals are in. This context could manifest itself in two forms of less judgmental (such as everyday life) and more judgmental (such as exams or experiments). That is, not only the number of senses but also the amount of judgment to be entered may modulate cognitive and emotional processes differently (Table 1). This is referred to as the Judgmental Hypothesis of Sensory Relativism, denoting that judgment and sensory relativism are intertwined. For instance, if you have no knowledge of a concept and you know you will not be judged, you do not experience much cognitive and emotional engagement. However, if you are in a different context where your answer is important, it might cause more cognitive and emotional engagement. Further elaborations and justification in light of cognitive linguistics will be given in the oral presentation.

	No Sense	Auditory	Visual	Kinesthetic	Auditory	Visual	Kinesthetic	Smell	Taste
	Avolvement	**Exvolvement**			**Involvement**				
More Judgement	*Extremely High* Cognitive/Emotional Engagement	*Moderately High* Cognitive/Emotional Engagement			*Extremely High* Cognitive/Emotional Engagement				
Less Judgement	*Low* Cognitive/Emotional Engagement	*Moderate* Cognitive/Emotional Engagement			*High* Cognitive/Emotional Engagement				

Table 1: The relationship between judgment, sensory involvement, and emotional/cognitive engagement

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Reconstructing storylines by integrating referential grounding in a FrameNet dataset: an applied approach of computational storytelling.

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Keywords: FrameNet, narratology, data-to-text, referential grounding

This paper takes a corpus of hundreds of texts referencing the incident known as *Malaysia Airlines Flight 17* (2014) and showing a strong range of temporal reporting distance, and investigates variation and change in how the event is reported as time unfolds. In the Dutch FrameNet annotation tool (Remijnse et al., 2022, Postma et al., 2020), the corpus is referentially grounded by links of in-text mentions to structured data. On top, the corpus is annotated with FrameNet frames (Ruppenhofer et al., 2016). Instead of annotating all predicates in bottom-up fashion, we annotated top-down from the event, only tagging predicates that contribute to the story, in line with the narratology-based approach of Vossen et al. (2021). This approach regards a reference text as a complex network of temporal relations (chronology), causal relations (causality) and narratological relations (perspectives), all anchored in a climax event (Bal & Boheemen, 2009). A collection of frame-annotated texts referencing the same climax event, as exhibited by our corpus, then allows us to extract the overall developing storyline and provides insight in, e.g., shifts in perspectives on participants, foregrounding and backgrounding effects (Grimes, 2015), and the frames typically used in reference to the type of event, i.e., aircraft shootdown.

Our results show that across time, reference to the main event consistently evokes a small set of frames, like the Downing frame. The higher the temporal reporting distance, the more these frames are evoked in definite nominal expressions, suggesting that the climax event is backgrounded in order for related subevents to be foregrounded. In line with Remijnse et al. (2021), a frame like Downing can be classified as an Anchor frame, i.e., a frame continuously evoked in reference to an event of a certain event type in order to background common knowledge of this event.

With the frames referencing the climax event, we find a strong distinction between expressed and implicit frame elements. Between those frames, the frame elements that are marked by the annotators as unexpressed (a feature of the annotation approach), all share prototypical agentive features (Dowty, 1991). Yet, the corpus does show links from text mentions to suspects of the event in the structured data. Instead of denoting the climax event, the frames evoked by these mentions (e.g., Suspicion, Arrest, Criminal_investigation) denote related subevents. We see that our referentially grounded approach to frame annotation can reveal characteristic aspects of the story of *Malaysia Airlines Flight 17*: lack of knowledge of the identity of the perpetrator of the aircraft shootdown is backgrounded as an implicature, while the suspects are perspectivized in related subevents.

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How to analyze semantic roles across interfaces: taking FrameNet to discourse level.

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Keywords: FrameNet, discourse, semantic roles, referential grounding

Rather than investigating the conceptual schemas evoked by language, this paper takes a referentially grounded corpus annotated in the Dutch FrameNet (DFN) annotation tool (Remijnse et al., 2022, Postma et al., 2020) and starts from conceptual schemas to investigate framing in language. By taking events in the world as the starting point of compilation, the corpus shows large variation of texts referencing single events. The ultimate goal is to annotate the network of frames and see how they form a semantic structure at both text and corpus level. This way, the frames distribute semantic roles on different linguistic interfaces. So far, the discussion surrounding semantic roles has largely focused on the semantics-syntax interface (Fillmore, 1968; Dowty 1991; Primus, 2016), resulting in many annotated corpora, such as PropBank (Palmer et al., 2005), FrameNet (Ruppenhofer et al., 2016) and VerbNet (Schuler, 2005), and has developed into the task of Semantic Role Labeling (SRL) (Gildea & Jurafsky, 2002). However, the sentences below display alternative ways of realizing roles in addition to syntax.

(1) a. William had to transfer between a lot of flights during his trip to Denmark.
b. Yesterday, he finally arrived.

(2) The thief ordered a cup of coffee.

In the sequence in (1), the destination role of the verb *arrive* in (1b) is realized but sentence-externally in (1a) by *Denmark*. Although there has been some attention to discourse-licensed roles in cognitive science (Carlson & Tanenhaus, 1988) and SRL (Gerber & Chai, 2012; Ruppenhofer et al., 2010), this phenomenon has largely been ignored in classic literature and also in annotated corpora.

In addition to discourse, semantic roles can also remain completely unexpressed. Sequence (1) does not mention any source role. This role is then not licenced linguistically, but pragmatically inferred. Furthermore, *thief* in (2) is the agent of order, but at word level also incorporates an agentive role with regards to the concept of stealing. As far as we know, these types of semantic roles have gained little to no attention in literature and little is known about how it connects to other expressions in the discourse. Fillmore (1986) and Ruppenhofer et al. (2016) propose a variety of Null-Instantiations, but since the FrameNet paradigm is applied at syntax level, those unexpressed roles are lacking extra-sentential antecedents in annotation.

All of these semantic role realizations are captured in our annotations. Text-mentions are both linked to structured data and annotated with FrameNet frames. Referencing the same events, the texts together form a coherent story but differ in their narrative structure and framing. In order to capture the dynamic narratives of each text, the FrameNet annotations are adapted to the discourse level, i.e., within a text, frame elements are annotated across sentence boundaries, in addition to word level, and as implicatures when not found in the document. This way, we cover the realization of frame elements across all aforementioned linguistic interfaces and provide an annotation scheme in which we can observe how - in natural language data - these interfaces are utilized to distribute the roles.

The links to structured data are then used to investigate this distribution as a function of reference in combination with pragmatic factors. We expect, for example, that topicalization affects foregrounding and backgrounding principles. Focalized participants are foregrounded and therefore overtly express a high number of roles in syntax, whereas non-focalized participants are backgrounded by minimal expression, which suffices as the antecedent of roles across sentences. Thus, the realization of a role in natural language is subjected to topicalization of its referent.

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The polysemy of the Finnish *jonnet ei muista* ('youngsters don't remember') construction

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Keywords: Appellativization, Cognitive semantics, Constructions, Polysemy

Jonnet ei muista (*jonne*-PL NEG remember 'youngsters don't remember') is, according to the Dictionary of Contemporary Finnish (Kielitoimiston sanakirja), a benevolent phrase which is used in situations when a younger person doesn't know something that older people are familiar with. *Jonne* is originally a male first name, but it has gone through the process of appellativization, that is, it has also gained an appellative meaning. In contemporary colloquial Finnish *jonne* means a stereotypical teenage boy. In a way, it can be compared with the rapidly spread English expression *Karen* which is used for stereotypical middle-aged white women acting inappropriately and racist (see Garcés-Conejos Blitvich 2022).

In my poster, I analyse the semantic, lexical, and grammatical properties of the *jonnet ei muista* construction, using two kinds of data sets, one compiled from the Suomi24 ('Finland24') internet forum and another from Twitter. I demonstrate that besides the sense mentioned above the construction also has another basic meaning.

The analysis shows that the subject of the construction is the plural form *jonnet*, and it includes a cognitive verb in negative form. The verb is in most cases *muistaa* ('remember'), but it can also be some other cognitive verb, such as *tietää* ('know') or *ymmärtää* ('understand'). Typically, the construction also has an NP as an object.

I argue that the construction is polysemous and has two different basic meanings. First, it is indeed used in situations when a younger person is not familiar with something that happened in previous decades (1). Second, it is used in situations when a younger person does not yet know something that they will probably learn later (2). In this latter meaning, the thing that will be learned later can also be proper behaviour in contrast to the immature behaviour of younger people.

(1) Jonne-t ei muista GTA 1.
jonne-PL NEG remember GTA 1
('Youngsters don't remember the GTA 1 game')

(2) Jonne-t ei ymmärrä metafor-i-a.
jonne-PL NEG understand metaphor-PL-PTV
('Youngsters don't understand metaphors')

I adapt the methodology and concepts of cognitive semantics. In cognitive concepts (see Langacker 2008), in the constructions bearing the first meaning type, the landmark (object NP) is situated in the past, more precisely in the time when the issue being discussed was an everyday thing, whereas the trajector (*jonnet*) is situated in the present moment. However, in the constructions conveying the second meaning type, the trajector (*jonnet*) is still situated in the present moment, but the landmark (object NP) is situated in the future, in the time when the young person should learn the thing expressed in the object NP.

In my poster, I will give a detailed analysis of *jonnet ei muista* construction, revealing its lexical and semantic boundaries.

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The effect of visual information on speech comprehension in Japanese younger and older adults

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Keywords: co-speech gestures, mouth movement, cognitive ageing.

Our daily communication is rarely conducted in a quiet environment. Messages are often conveyed amid noise. Previous research has shown that visual information accompanying speech, especially mouth movements and gestures, helps us to understand a speaker's speech in noisy environments (e.g., Drijvers & Özyürek, 2017; Schubotz, et al. 2019). However, these studies were conducted in English and Dutch, which have a large number of phonemes for both vowels and consonants. For those language speakers, lip movements can be an important clue for phonological discrimination. In fact, Sekiyama and Tohkura (1991) found that the McGurk effect in English speakers gradually becomes bigger with age, but the effect in Japanese speakers does not change with age. This suggests that as Japanese has fewer phonemes than English, mouth movements are not a crucial cue to perceive sound information in Japanese communication. However, when they comprehend the meaning of a word, rather than perceiving a sound, mouth movements and hand gestures may also be a reliable resource for them. Thus, we investigated the effects of visual information on speech comprehension in noise in Japanese younger and older adults.

Twenty-five younger adults (M= 20, SD= 3.3, 13 women) and twenty-five older adults (M=69, SD= 4.1, 12 women) participated. To create the audiovisual stimuli, 220 Japanese verbs were initially selected. We then videotaped a female actor saying each verb with two different versions. In one version, she uttered a verb while producing an iconic gesture to represent the action of the verb. We also created another version by blurring her mouth movement. For speech quality, we created three versions of speech: SNR-12, SNR-18 multi-talker bubbles and clear speech. From these materials, we created experimental conditions. Nine conditions came from combinations of three visual variations and three speech variations. Two more conditions were added by editing the 'only mouth movement' condition, and the 'only mouth and gesture condition' (without speech). But these visual-only conditions were excluded from the first analysis due to the unbalanced design for ANOVA.

The experiment was carried out individually. Participants were instructed to verbally state which verb the actor said into a microphone. The order in which the conditions and verbs were presented was randomized. The correct response rate (correct trials out of 20 trials) for each condition was calculated. We conducted a three-way mixed ANOVA with the effect of modality (blurred-mouth, mouth, or mouth + gesture) and noise level (clear speech, SNR-12, or SNR-18) as within-subject factors and with age (younger or older adults) for score accuracy.

Results can be summarized as follows; 1) younger adults comprehend speech better than older adults, 2) for both age groups, mouth movements and gestures facilitate comprehension of degraded speech when noise is present, and 3) younger adults obtained more information from gestures than older adults. These suggest that for both Japanese younger and older adults, both mouth movements and gestures aid speech comprehension. Although mouth movement has a similar impact on both age groups, gestures have a stronger influence on comprehension in younger adults.

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Analyzing Deixis in Multimodal Genres: extending the FrameNet model to account for invited shifts in joint attention in visual narratives

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Keywords: Deixis, Multimodality, Joint Attention, Frame Semantics, FrameNet, Analytical Categories

In this presentation, I propose the extension of the FrameNet Brasil model for the annotation of multimodal genres so as to include categories capable of accounting for invited shifts in joint attention in visual narratives.

More than one century ago, de Saussure (1916) defined the object of Linguistics as a system composed of linguistic signs—langue—separating the field from Semiotics. Since then, linguists of various theoretical and methodological affiliations have been working on the description and explanation of varied phenomena in language, deixis being one of the most prominent of them. Despite the fact that many of the foundational research on this topic propose correlations between deixis in verbal language and other semiotic modes—such as gesture and image—, the main focus of research lies on the linguistic material in which the expression of deixis is grounded (Bühler, 1934; Fillmore, 1975; Levinson, 2004).

As the discussion on the relation between language use and multimodality advances, the need for a multidisciplinary approach to many phenomena once restricted to language has been emphasized, deeming the analysis of verbal text as the sole system for meaning construction insufficient. In Cognitive Linguistics, research on co-speech gesture (Sweetser, 2007; Steen et al., 2018; Cienki, 2022) has expanded the analytical coverage of models such as Mental Spaces Theory and Construction Grammar. As for Frame Semantics, since the original propositions of the theory, Fillmore (1976, 1982, 1985) has recruited the notion of visual scenes to explain the role of frames in organizing knowledge. Moreover, this theory has highlighted the fact that frames play a role in understanding that goes beyond lexical semantics. Nonetheless, the diverse possibilities for the application of frames to the analysis of meaning construction was restricted—for the sake of feasibility—as the theory was implemented in FrameNet (Fillmore et al., 2003).

Recent research has been extending the FrameNet methodology to the analysis of both textual genres (Dutra & Sigiliano, 2021) and image (Belcavello et al., 2020; Torrent et al., 2022; Viridiano et al., 2022). Those analyses have been uncovering correlations which are fundamental for the development of a Multimodal Frame Semantics. Nonetheless, they still take verbal language as a starting point, associating entities depicted in the images to verbal language superimposed to them. Considering the varied resources that the different communicative modes recruit for meaning construction, in this paper, we propose the extension of FrameNet's analytical framework to include analytical categories not grounded on verbal language. Namely, we propose an initial non-exhaustive set of categories for accounting for invited shifts in the deictic center in films.

By bringing together contributions from human communication studies—especially on the role of prelinguistic strategies for building joint attention scenes (Tomasello, 2008, 2018)—, from the analysis of deixis in narratives (Segal, 1995; Zubin & Hewitt, 1995) and from Frame Semantics, we claim that semiotic devices of different types can be mobilized in filmic narratives so as to invite viewers to promote shifts in the center of the joint attention scene: whole scene sequences, specific visual elements, sound effects, camera takes, editing choices and, also, verbal language. To illustrate the proposed typology, we provide example analyses of deictic center shifts in films and describe the annotation methodology to be incorporated to the FrameNet model so as to account for them.

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German affixed words: morphological productivity and semantic transparency.

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Keywords: Morphological productivity, Semantic transparency, German affixed words, Embeddings

This present paper discusses the relation between morphological productivity and semantic transparency. Many studies have proposed criteria for establishing whether a derivational rule is productive, and what factors co-determine its productivity (Baayen, 2005; Plag, 2003; Dressler, 2003; Fern´andez-Dom´ınguez, 2009). What emerges from these studies is that, qualitatively, productivity decreases as the number of restrictions and conditions on a word formation process increases. Quantitative studies of productivity have led to several measures that provide an overall numeric assessment of different aspects of productivity (e.g., Baayen, 2005), but these measures by themselves cannot answer the question of to what extent the different qualitative factors contribute to the actual values of the quantitative measures.

The paper addresses one specific qualitative factor that has been argued to co-determine productivity, semantic transparency (see, e.g., Aronoff, 1976; Baayen, 1993; Bonami and Paperno, 2018). The present study reports on exploratory research that follows up on the studies of Mandarin compounding (Shen and Baayen, 2022), but now addressing the productivity and transparency of German particle verbs and German derivational suffixes. Using distributional semantics, we compare German word formation using particles with derivational word formation. We observed that derivational suffixes, but not particles, tend to make strong independent semantic contributions to their carrier words (Figure 1). In two-dimensional t-SNE maps, complex words show clustering by affix, but not by particle (Figure 2). Furthermore, the semantic vectors of suffixed words are predictable from their base words with higher accuracy than is possible for particle verbs. For particle verbs, but not affixed verbs, semantic similarity within the set of complex words correlated negatively with the number of types (Figure 3). Furthermore, only for particle verbs, a greater number of observed types predicted a reduced probability of observing unseen types. We propose that particle verbs primarily serve the onomasiological function of labeling, resulting in relatively idiosyncratic semantic vectors. By contrast, words sharing derivational affixes form distinct clusters in semantic space while maintaining strong and consistent semantic relations with their base words. This enables these words to serve not only as labels, but also allows them to be used with an anaphoric function in discourse.

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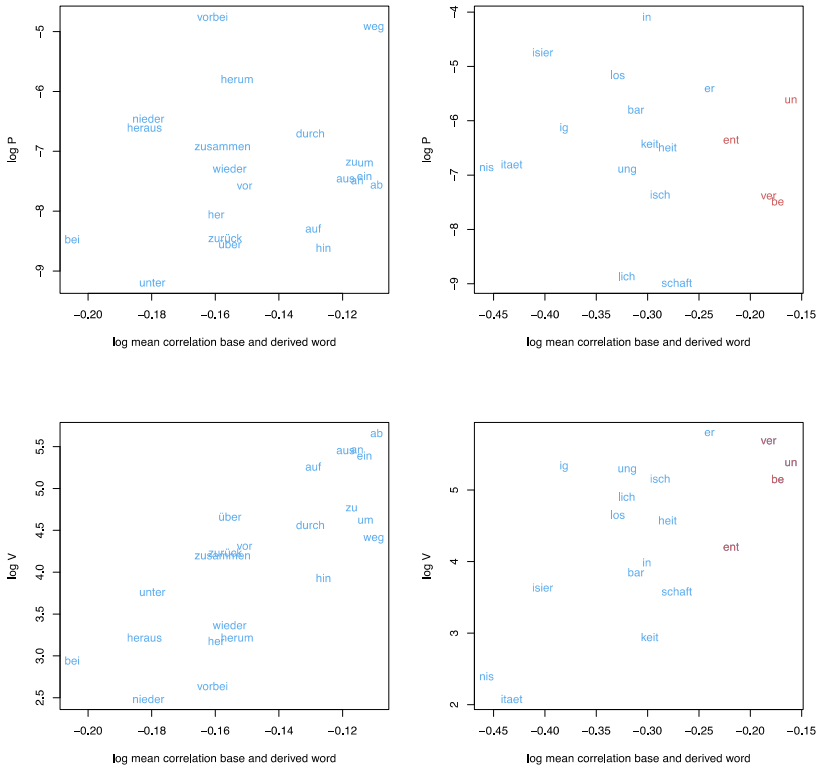

Figure 1: Log mean correlation of the semantic vectors of base word and complex word (horizontal axis) for particles verbs (left panels) and affixed words (right panels), by log potential productivity (P(N), upper panels) and extent of use (V (N), lower panels). Prefixes are highlighted in red.

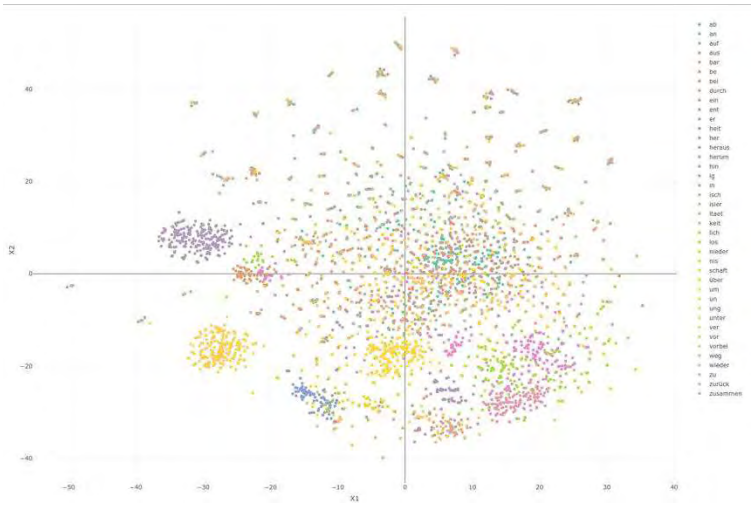

Figure 2: Locations of the shift vectors for affixed words and particle verbs in their joint t-SNE shift space. The well-defined clusters represent affixed words, excluding the prefixed verbs. Prefixed verbs tend to appear in base-word defined clusters together with particle verbs.

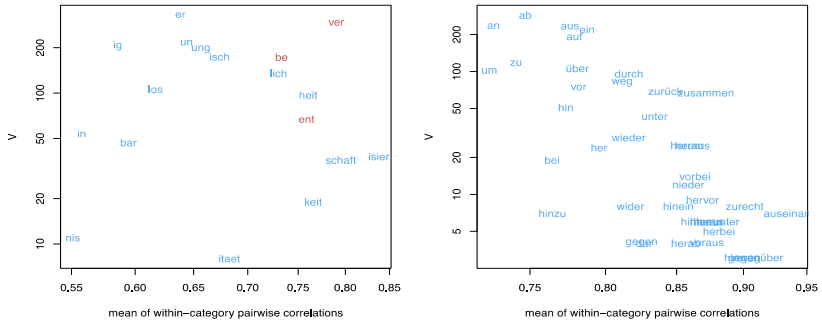

Figure 3: Mean of within-category pairwise correlations as predictor of the number of types. Left: affixed words; right: particle verbs.

The effect of COVID-related quarantine on individuals' implicit space-time mappings on the front-back axis

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Keywords: Space, Embodiment, COVID-related quarantine

Do people conceptualise the future or past as in front? Which factors influence space-time embodiment? These unsolved questions continue to arouse attention and debate. The Temporal Focus Hypothesis (TFH) entails that individuals that value the past tend to conceptualise it in front of ego, while individuals that value the future tend to map the future in front of ego instead (de la Fuente et al. 2014). A central tenet of the TFH places emphasis on individual differences and short-term priming of attention as factors affecting implicit space-time mapping shifts. For instance, on the individual differences level, Buddhists who believe in the cause-effect of past activities on the future were likely to conceptualise the past in front, whereas Taoists who pursue immortality in future were likely to map the future in front (Li & Cao 2018). On the context of operation level, studies show that participants are more future-focused when tested in the morning than in the afternoon (Li 2018) or when primed with statements emphasizing the future (de la Fuente et al. 2014). This study attempts to extend this line of inquiry by testing a contextual factor, COVID-19 quarantine status, in Chinese participants. Results from a temporal attitudes task and a temporal orientation task show future-focused attitudes and future-in-front mappings, regardless of participants' quarantine status. However, unexpectedly, we also discovered that the temporal focus of individuals interacts with their attitudes towards COVID-19, as captured by a COVID attitudes questionnaire (Mecit, Shrum & Lowrey 2022). Specifically, those participants that displayed more precautionary behaviours towards COVID-19 also tended to be significantly more future-focused than participants who displayed lower precautionary attitudes towards COVID-19. These findings suggest that individual differences (such as attitudes towards COVID-19) may be stronger determinants of temporal focus than contextual factors (like quarantine status).

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Masked Priming Effects on Metaphor Comprehension in Chinese English Learners: An ERP Study

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Keywords: Priming; Masked primes; Metaphor processing; Event-related potentials (ERPs)

In the area of unconscious vision, masked priming offers the promise of automatic, strategy-free lexical processing in semantic priming. It has been taken as an indicator of completely automatic processes occurring deep within the lexical processing. It is controversial to explain the effects observed with masked priming by any single mechanism, whether lexical or sublexical. However, it can be a promising tool that under some conditions it shows sensitivity to masked variables. To investigate the nature of how metaphors are decoded when the target words are preceded with masked primes, this study used event-related brain potentials (ERPs) to examine Chinese and English metaphor processing from Chinese-English learners (EFLs). Participants were asked to judge whether metaphors with different masked primes (metaphorical primes/literal primes/unrelated primes) were sensible or not. For Chinese metaphors, parameter-free cluster permutation analysis of the brain responses revealed that clusters at the left temporo-occipital areas had larger negative amplitude for the target metaphors preceded by metaphorical primes compared to those preceded by the literal primes within the 240-280ms time window. For English metaphors, comparable priming effects with larger positive amplitude (LPCs) for the target words after the metaphorical primes were found at the central brain area within the 400-550ms time window. The results show that metaphorical masked primes have an influence on both L1 and L2 metaphor processing, which can be attributed to a more automatic activation consistent in metaphors interpretation per se. The different patterns of brain responses for metaphor processing in Chinese (L1) and English (L2) support Defaultness Hypothesis and Graded Salience Hypothesis (GSH).

Distributions of Synonyms and Antonyms in Japanese Color Terms Contrasted with Borrowed Color Terms

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Keywords: Color terms, Antonym, Synonym

In this study, I discuss the distribution of the opposite color concepts black and white in Japanese, specifically two pairs of antonyms and synonyms: *kuroi* “black” and *shiroi* “white”; *burakku* “black” and *howaito* “white.” Among them, *kuroi* “black” and *shiroi* “white” are called *wago* that are native Japanese words. However, *burakku* “black” and *howaito* “white” are loan words borrowed from English.

Previous studies treated native Japanese and loan word pairs as if they had the same meaning (for example, Matsunaka 2017). Further, from the property of synonyms and antonyms, we expect that synonymous adjectives express the same and antonymous adjectives express the inverse literal and metaphorical meanings.

This study utilizes “Balanced Corpus of Contemporary Written Japanese” (BCCWJ) and retrieves the four color terms. Then the author classified 300 examples for each color adjective by the meaning of modified word. Figure 1 shows the distributions of *kuroi* and *burakku*.

	body/race	fashion	artifact	nature	shadow/mist	metaphor	animal	food	brightness	others
kuroi	23%	22%	19%	15%	9%	5%	6%	1%	0%	1%
burakku	5%	17%	12%	13%	0%	20%	16%	12%	4%	3%

Fig. 1: Distributions of kuroi and burakku

The results clarified that each color term has its own distribution and selectional restrictions for its modified words. The following examples show one of the distributional differences.

(1) kuroi kumo
  black cloud
  “a dark cloud”
(2) *burakku-no kumo
  black-adnominal cloud
  “a dark cloud (intended)“

To examine this distribution, I conducted two further studies : 1) a psychological study, in which participants were asked the focal color and color range that each color term indicates using Munsell color chips and 2) a questionnaire-based study, in which participants were asked to evaluate meanings of each color word using 19-pairs of 7-point semantic differential scales.
The results clearly showed that the focal color of synonyms are the same. In contrast, the color range for each synonymous word is different; both of the the native Japanese color terms describe wider color ranges than their corresponding loan words. (This explains the difference between (1) and (2).) In addition, participants showed a different impression for each synonymous word. These results explain why Japanese antonymous and synonymous color terms have different distributions when compared to borrowed color terms described in Figure 1.

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Spatial Concepts and Patterns of Extended Spatial Description in Contemporary Japanese

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Keywords: Mental Lexicon, Space, Japanese

Investigation of spatiality in our mind and language is key to understanding our mental lexicon. However, recent research (Blasi et al. 2022) suggests that the previous scholarship did not pay the necessary attention to the diversity of material in the investigation of fundamental domains of mental lexicon such as spatiality.

This paper aims to describe and analyze spatial concepts and patterns of spatial description in a language underrepresented in spatiality research - contemporary Japanese. This work contributes to the typology of the spatial description through qualitative and quantitative analyses of materials obtained through free word association and spontaneous speech experiments. This paper proposes a complex approach to the investigation of spatial concepts in Japanese, combining network analysis of the free word association experiment data and corpus analysis of the spontaneous speech experiment.

A free word association experiment Small World of Words Japanese version, a part of an international Small World of Words project, is conducted online to collect a large-scale database of Japanese word associations. Currently, the Japanese data set contains more than 645,000 responses. The task asks participants to give the first three words that come to their minds for a cue word. Through network analysis (De Deyne, Verheyen & Storms 2016; Lancichinetti, Radicchi & Ramasco 2010) of the free word association data, the following set of spatial concepts for Japanese was detected: 1. Human-centered space, 2. Nature-centered space, 3. Container, 4. Space as an experience, 5. Betweenness space, 6. Outside/Inside space, 7. Space as a possession.

For the study of patterns of extended spatial description, spatial descriptions of six static visual stimuli representing three types of space – room, landscape, and tabletop collected from 51 Japanese native-speaking participants were recorded, transcribed, and organized in a corpus of 306 texts. Annotation and analysis of the expressions of spatial relations and detection of spatial description patterns in the corpus follow the basic principles outlined by Kobozeva (2000). The grounds for her approach lay in the work of Talmy (1983), and the typology of the 'strategies' Kobozeva proposes intersects with the notion of perspective developed by Taylor and Tversky (1996).

The outcome of the analysis of the types of spatial descriptions within each of the patterns of description demonstrates that there are differences from what was suggested in previous works on the topic written based on European languages e.g., Taylor and Tversky (1996). The most significant differences are 1. prevalence of intrinsic frame of reference, or object-centered frame of reference, in scanning perspectives in Japanese, as opposed to relative frame of reference, or viewer-centered frame of reference, in English; 2. presence of variation of scanning – a perspective scanning based not on predominantly "left"/"right" scanning axis, as typically found in English (Taylor & Tversky 1996) or in Russian (Kobozeva 2000), but on the "closer/further away" axis.

The findings of this paper confirm suggestions of the previous studies on spatiality (e.g. Levinson 2003) that to gain a fuller understanding of spatial perception and expression investigation with a wider range of languages is needed.

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Using dictionary definitions to identify the semantic profile of an open slot in a construction

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Keywords: Semantic categorisation, lexicographic data, constructional meaning, constructional productivity, Estonian

The study addresses the question of how to identify and characterise the semantic profile of the class of words that can appear in an open slot of a construction. The description of the semantic profile of a constructional slot contributes to the identification of the meaning(s) and productivity of the construction, including for constructicographic purposes.

In previous studies different semantic inventories have been used to categorise the words, mainly verbs and event nouns, that appear in a construction, for example, an inventory of event types that are basic to human experience, e.g. someone causing something, someone experiencing something, etc. (Goldberg 1995:39); more narrowly circumscribed verb classes (including subclasses) subsumed under these basic human event types, e.g. verbs of appearing, verbs of attaching and detaching, etc. (Barðdal 2008:63-68); more broadly defined event types, like mental, physical and social events (Levshina 2016:251); FrameNet (Fillmore et al. 2002) frames, e.g. Statement, Sound, etc. (Sundquist 2020:361-362, Bonial 2014).

The aim of the present study is to test an additional method for describing the semantic profile of a constructional slot. In a dataset consisting of the lemmas appearing in the open slot of a construction in corpus data, we annotate each lemma with descriptors extracted from their dictionary definitions. Based on the classification and clustering of the (sets of) descriptors, we will construct the semantic profile of the class of lemmas that are compatible with this constructional slot. The added value of the method is that it allows to capture semantic dimensions that crosscut categories like event types, verb classes, or frames, for example, intensity, collectivity, or impulsivity. Such aspects of meaning can be gleaned from dictionary definitions, which go beyond recording the broad semantic type of a lemma. A second advantage of the method is that it can be applied to any set of words defined by a construction, not only to words denoting events or some other particular semantic type.

We will apply the method to an expressive and colloquial complex predicate construction in Estonian. Our data consists of the instances of the construction extracted from the Estonian National Corpus (ENL21). The dictionary definitions come from the Combined Dictionary of Estonian (CombiDic22).

The construction consists of the finite verb *minema* 'go' combined with an NP headed by an event noun in the translative case form, see (1). The verb does not take a subject and is always in the third person singular form. The construction denotes the inception of the nominalised event.

(1)	*Wisla*	*ja*	*Levadia*	*fännide*	*vahel*	***läks***	***lööma-ks***.
	Wisla.GEN	and	Levadia.GEN	fans.GEN.PL	between	**go.PST.3SG**	**fight-TRA**

'A fight broke out between the fans of Wisla and Levadia.'

In terms of productivity indicators (Baayen 2009), the construction is highly productive. In terms of collostructional strength (Stefanowitsch & Gries 2003, Gries 2022), the vast majority of the 1386 lemmas represented in the dataset show an equally weak association with the construction. Nevertheless, the meaning of the construction restricts the class of words that are compatible with it. We hypothesise that the aspects of the meaning of the construction that restrict the class of compatible words are not limited to event types or frames but include additional features that can emerge from the analysis of the dictionary definitions of the lemmas.

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Integrating Frame Semantics in Lexical Substitution Tasks to Improve Lexical Precision

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Keywords: Frame Semantics, Lexical Substitution, Natural Language Processing

Due to the recent boom in technology development, we have witnessed in the past decades, doors have been opened for enterprises that link language and technology. In some cases, it might be necessary for companies to adapt the language used in software for it to be useful in certain domains. Thus, it is necessary to conceptually represent these domains. In this sense, this paper aims to investigate how the use of semantic frames as a contextual information layer could help the lexical prediction task in a company's terminology base. Frame Semantics (Fillmore, 1982; 1985) is characterized as an empirical model for semantic analysis. Petruck (2001) describes the frame as a central structure that contributes to the organization of the lexicon as well as to semantically related words. As Faber (2012) points out, based on the precepts of Frame-based Terminology, if words evoke frames and can be seen as a point of access to knowledge, terms can also have this function, showing that frames help understand specialized knowledge. One way to analyze the terms and search for information regarding the frames and their contextual aspects is through FrameNet (Ruppenhofer, 2016), in which we can connect the linguistic analysis and the computational tasks. Therefore, the first step of our methodology was to analyze the used dataset, consisting of SemEval-2007 Task 10 (McCarthy, 2007) and Concepts-In-Context (CoInCO) (Kremer, 2014) data. It presented several instances, each one containing a sentence, the context, a target term, and a list of predictions of lexical substitution terms for the target term. To add the frame layer to the computational model, we selected the frames Employee_scenario and Employer_scenario from FrameNet that were related to the company's scenario. To support lexical prediction experiments, we searched for words related to the scenarios in the dataset. From the computing side, the prediction task in the dataset improved with the frames layer, providing high-quality and wider information as contextual information. Computational models, Transformers (cf. Vaswani, 2017), use the main terms from the semantic frames, improving the results from 38.7% to 41.3% in relation to recall metric, which measures the model's capacity to predict the relevant terms considering the totality of terms. From the linguistic side, the knowledge structure and its information help the user to understand the terminology and its context. The addition of the frame semantics layer resulted in the creation of a scenario that considers the context, the meaning of words, and the semantic information, among other linguistic resources to attribute adequate senses to the lexical units. In relation to the dataset analysis, we observed that the lexical substitution is a complex task regarding annotation, because there are several alternative terms for a target term in a specific context, which makes it difficult to annotate all possible alternatives. Therefore, the evaluation can be impaired, once even if the models predict a correct alternative, it is considered an incorrect answer since it was not annotated by the linguist.

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A Multivariate Quantitative Study on English Marginal Modal Construction from the Perspective of Variationist Linguistics——A Case Study of “dare (to) V”

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Keywords: marginal modal; *dare*; constructional alternation; multivariate quantitative research; conditional inference tree analysis; random forest analysis

The modality system is "the most important and complex concept" in the study of grammar (Palmer, 1979), and constructional alternation (like *must* and *have to*, *should* and *ought to*) is the most important topic in the study of diachronic cognitive corpus (Xu Jiajin, 2020). The scope of use of different constructions overlaps to a certain extent, but the differences between them are more than common (Gries, 2003). One form cannot completely replace the position of the other, and English users' choice of construction variants will be restricted by some factors (Meng, 2019).

From the perspective of corpus-based variationist linguistics, this study takes the variants of “dare (to) V” marginal modal construction (modal-*dare*,lexical-*dare* and merger-*dare*) as the research object, using software including Excel, Perl, and R as research tools to conduct a quantitative research by means of conditional inference tree analysis and random forest analysis. The study is aimed to find out the main factors influencing the choice of variants in “dare (to) V” and its diachronic evolution path in American English.

A certain proportion of data in COHA(1860-2009) is screened out through Perl programming and tagged. Previous studies of Szmrecsanyi et al. (2016, 2017) and Meng (2019) as references are considered for the classification and labeling of variables. There are 10 predictor variables which may affect the group of modal construction variants are considered, namely, genre, year, inversion, sentence polarity, sentence type, word class, stress after (the first stress after *dare*), clause type, transitivity, and dynamicity.A visualization on the frequency and distribution of “dare (to) V” is displayed via {party} package in R. Based on methods such as regression analysis and classification models, the factors that have a significant impact on the research object are separated from multiple variables, and then combined with relevant linguistic theories to interpret the results.

The results show that during 1860-2009, the main form of this marginal modal construction is lexical-*dare*. In other words, the full infinitive is preferred to be applied with *dare*. Meanwhile, the main factors that influence the choice of infinitive complement type are clause orientation, inversion, word class of subject, year, and clause type, among which clause orientation and inversion have significant influence in various cases. In addition, there are some cases in form of merger-*dare* (or the merger form of modal-*dare* and lexical-*dare*), and its frequency increased from 1860 to 2009. Other factors considered does not sho in this study with a significant impact on the choice of this modal construction. The study also finds that there are two main forms of merger-*dare*, of which the usages are similar to modal-*dare* and lexical-*dare* respectively, so it is presumed that the two forms of merger-*dare* might have evolved from the other two forms respectively, which is a possible reason for the decrease in the use of both modal-*dare* and lexical-*dare* from 1860 to 2009.

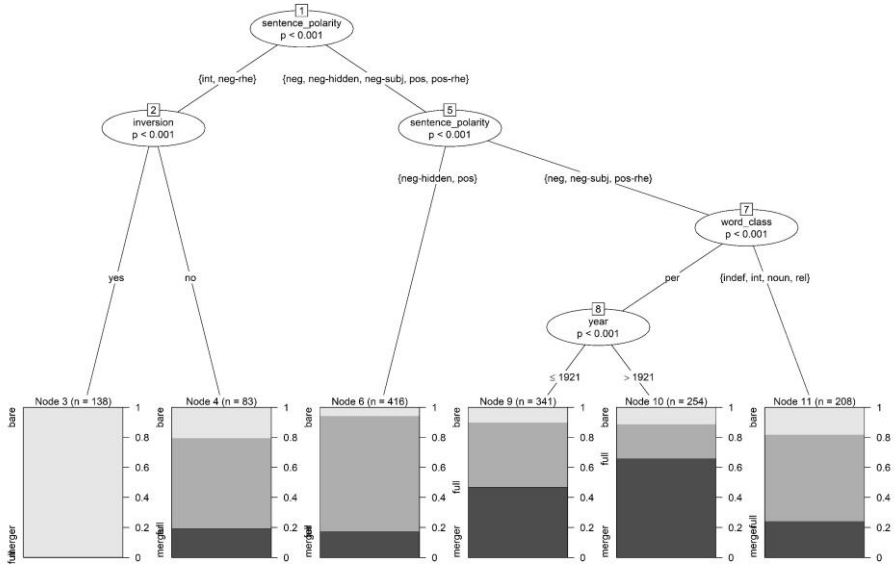

Fig.1 Result of conditional inference tree analysis on the use of variants of dare (modal-dare, lexical-dare and merger-dare) in COHA (1860-2009)

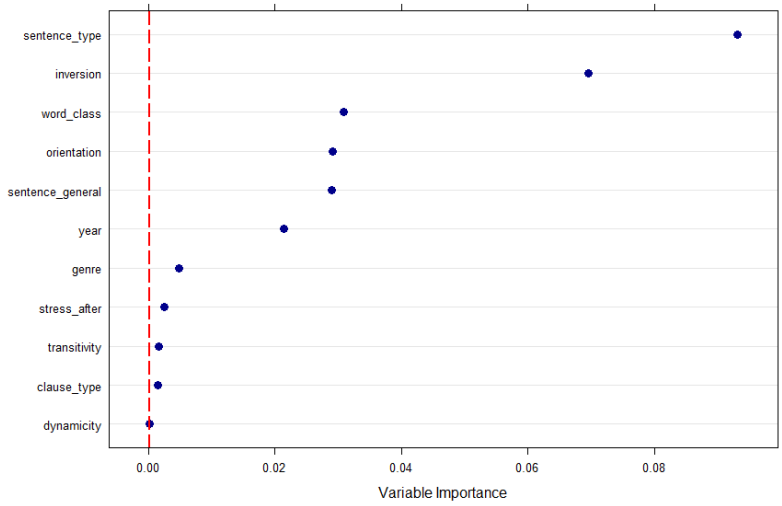

Fig.2 Result of random forest analysis ranking factors influencing the use of variants of dare in COHA(1860-2009)

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On the Importance of “Literacy” from the Phenomenon of “Spread of Traditional Chinese Medicine to the West” – Also on how to solve the problem of “the difficulty in learning Chinese characters”

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Keywords: spread of traditional Chinese medicine to the west, literacy, second writing teaching

During the Ming and Qing Dynasties, medical missionaries translated a large number of Chinese classics to the West, and the ”spread of traditional Chinese medicine to the west” promoted the Western understanding of Chinese traditional medicine. The reason why missionaries could translate Chinese classics is that they had the ability to read and write classical Chinese. However, nowadays, we cannot cultivate foreigners with the ability to read and write classical Chinese through ”teaching Chinese as a foreign language”. This paper finds that the cause of this problem is that the wrong view on writing in western linguistics — the writing is the symbol that records the language, which guides the ”teaching of Chinese as a foreign language”. The article argues that the Western linguistic view of writing is wrong, and a correct view of writing should be established to guide the teaching of “Chinese characters” and ”written Chinese” as a second writing, in this way, we can solve the problem of teaching “Chinese characters”. Only by attaching importance to the ”literacy” of Chinese writing, especially the ”literacy” of reading and writing classical Chinese, can we once again cultivate a large number of foreigners who can translate Chinese classics.

Frames with a Vision

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Keywords: conceptualisation of the future, frame blending, viewpoint

Much of the frame analysis in linguistics nowadays is based on the English-language Berkeley FrameNet. Although Berkeley FrameNet has grown over years, references to the future need further attention and development. In order to do this successfully we need to address a theoretical question: Is future a temporal perspective / viewpoint, or a temporal frame in its own right, or both? In an attempt to answer this question empirically we first engaged in data-driven analysis of 20 episodes of the RT show SophieCo Visionaries in English from 2020-21. We analysed 47 'future depictions' snippets, each 20 seconds long. These were selected based on corpus searches for the 'auxiliary verb 'will' + hands visible' and the subsequent manual verification of the results returned. We also ran Roth's (2016) PathLSTM on the video transcripts and compared the results of computational processing and manual analysis. Our 'frame activation' analysis of 336 elements – 235 linguistic and 101 gestural 'frame activation' triggers - revealed that both types of units contribute to multimodal communication on semantic and pragmatic levels. From the functions that hand gesture contributes, we selected those directly relevant to the activation of a 'future' frame or the construction of 'future' as a perspective or viewpoint (64 linguistic and 68 gestural). We examined the respective speech-gesture co-occurrences in a case study, while accounting for both future and the future-present-past relation with the structures *going to* + *back*; *will* + *back*; *will* + *return*; *will* + *was*/*were*. In analysing those structures, we considered a further 227 snippets from our large RT dataset (RT's SophieCo Visionaries '2019-February 2022' and SophieCo '2013-2022' broadcasts). Our focus on the gestural side was on direction and orientation (e.g. Núñez and Cooperrider 2013; Cooperrider et al. 2014; Valenzuela et al. 2020). We used frame-blending (Fauconnier and Turner 2008) and viewpoint blending (Nikiforidou 2012; Turner 2014) as our core analytical framework. We assessed 'future' as both a distinctive unity and as part of a unified 'future-present-past relation'. We engaged with Minsky 1980, Fauconnier and Turner 2008, Nikiforidou 2012, Turner 2014, and Timponi Torrent et al 2022) to discuss our findings.

Our study revealed the need for the 'future' as a part of FrameNet to be developed in close relation to the development of corresponding parts for past and present and with an appreciation of time conceptualisations as being multimodal frames and viewpoints at the same time. Our findings based on our manual analysis and the computational analysis of the 'linguistic' elements of videos enabled us to understand what aspects of frame analysis can and should be automated, especially for multimodal data. We map possible future directions for doing that.

We developed a dataset composed of video snippets for future, past, and present depictions, which we annotated for respective speech units and gesture, and which will be made available with our paper, once it is published.

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Examining the Role of Information Structure in In-Situ Interrogatives

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Keywords: in-situ interrogatives, islands, information structure, pragmatics

This paper examines “syntactic islands” and the implications of the Focus-Background Conflict constraint (FBC) for understanding them. Generative accounts posit that syntactic islands provide evidence for the existence of Universal Grammar (Schütze et al., 2015). However, functional accounts like “Backgrounded Constituents are Islands” (Goldberg 2013) and the FBC constraint (1) suggest that some islands can be explained by a clash in information structure, which can be learned from exposure, thus eliminating the need for a Universal Grammar account.

(1) Focus-background conflict (FBC) constraint (gradient version):
The more focused an element, the more focused the constituent it is part of.
(Abeillé et al. 2020)

Abeillé et al. (2020) applied the FBC to the "subject island", where extractions out of subjects are less acceptable than extractions out of objects:

(2) a. Which book do they criticize [the author of _]?
b. *Which book does [the author of _] face criticisms?

This contrast only occurs if the extracted element is focused, as in interrogatives, but not, for example, in relative clauses (with pied piping, in English, French and Italian; Sprouse et al. 2016, Abeillé et al. 2020). The FBC explains this: the subject is by default a topic and therefore backgrounded, while the extracted element is focused in interrogatives. In relative clauses, the extracted element is not focused, so there is no conflict.
We tested the predictions of FBC on in-situ interrogatives in two online studies. The FBC does not take extraction into account, so in-situ interrogatives should not differ from ex-situ interrogatives, and display a “subject island effect”. In Experiment 1, we tested in-situ interrogatives in French (2x2 design with yes/no questions as control conditions, 24 items and 42 distractors, 1-10 Likert-scale), and found no island effect. Conditions with a wh-phrase in a subject were rated as highly as conditions in an object (Figure 1).

An explanation could be that in-situ interrogatives in French are used when the proposition is presupposed - meaning the wh-phrase is not focused. However, in situ Interrogatives have become dominant in spoken French (Thiberge et al. 2021), and our materials were not presented in an echo context, so this is not likely.

In contrast, in situ interrogatives are much less common in English and are mostly used for quiz questions and clarification requests. Unlike information questions, quiz questions are addressee-centered: the speaker is not interested in the answer, but in whether the addressee knows the answer (Postal 1972:50-54). Experiment 2 tested in-situ interrogatives in English, as quiz questions, with stimuli translated from Experiment 1. The task combined forced-choice and acceptability judgment. Participants saw a context sentence (4a) and had to answer a comprehension question (one among 4b-e), then rate the formulation (4b-e) on a 1-7 Likert scale. Results were similar to the French experiment (Figure 2).
The results of our experiments are not as predicted by the FBC as it stands. One possible reformulation is to target only extracted elements:

(4) A focused element should not be more focused than its non-local governor.

Alternatively, “focused element” in the FBC may be too general, and other pragmatic factors, such as addressee-centeredness, may play a role rather than syntactic factors. This explanation aligns with a cognitive perspective and does not require the assumption of the influence of syntactic factors in a discourse constraint.

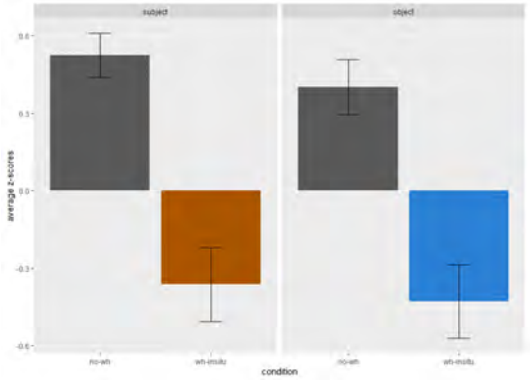

Fig. 1: Results of Experiment 1 on French in-situ interrogatives.

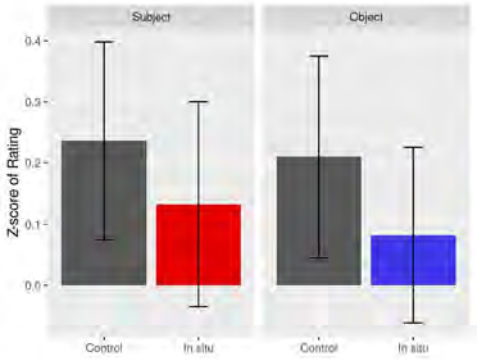

Fig. 2: Results of Experiment 2 on English in-situ "quiz" interrogatives.

(3) Materials for the French experiment:

a. La forme de quelle fenêtre trouble le maçon ? [subject + in situ]
the shape of which window disturbs the contractor

b. Est-ce que la forme de la fenêtre trouble le maçon ? [subject + control]
INTER the shape of the window disturbs the contractor

c. Le maçon désapprouve la forme de quelle fenêtre ? [object + in situ]
the contractor disapproves the shape of which window

d. Est-ce que le maçon désapprouve la forme de la fenêtre ? [object + control]
INTER the contractor disapproves the shape of the window

(4) Materials for the English experiment:

a. After struggling for so long with the strangely shaped window frame, the contractor was relieved to move on to the bathroom and be finally done with the kitchen. **[Context]**

b. [The shape of which window frame] confounded the contractor because of its irregularity? (The window frame in the kitchen / The window frame in the bathroom) [subject + in situ]

c. Did the shape of the window frame in the kitchen confound the contractor because of its irregularity? (Yes / No) [subject + control]

d. The contractor disliked [the shape of which window frame] because of its irregularity? (The window frame in the kitchen / The window frame in the bathroom) [object + in situ]

e. Did the contractor dislike the shape of the window frame in the kitchen because of its irregularity? (Yes / No) [object + control]

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Exploring semantic organization across mental lexicons: Perception verbs in Mandarin and English

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Keywords: perception verbs, distributional semantics, mental lexicon, semantic vectors, category

Verbs of perception tend to have many shades of meaning (Viberg, 1983; Marco & Jansegers, 2019). This study addresses perception verbs from a cross-linguistic perspective, comparing Mandarin Chinese and English. We made use of distributional semantics (Firth, 1968; Landauer & Dumais, 1997), taking pre-compiled word embeddings obtained with FastText (taken from `https://fasttext.cc/docs/en/crawl-vectors.html`) as starting point for our analyses.

As a first step, we defined a series of categories comprising concrete nouns (for, e.g., food, animals, and persons), as well as evaluative adjectives, modal verbs, cognitive verbs, time expressions, and onomatopoeia. Furthermore, we defined a highly culture-specific category comprising words for supernatural beings. For Mandarin, we also included the philosophical terms *yīn*, *yáng*, and the 5 elements (*wǔ-xíng*).

As a second step, we then used unsupervised clustering methods (PCA, MDS, t-SNE) to investigate how the perception verbs are positioned with respect to the clusters comprising the words of the above categories. The maps for the categories in Mandarin and English show both similarities and differences. Perception verbs in both languages were closer to cognitive verbs, modal expressions, and adjectives, and positioned further away from concrete categories(e.g. food and plants). Cultural differences also clearly emerged. Mandarin perception verbs are generally closer to words for supernatural beings, whereas English perception verbs do not show this tendency.

For the contrastive analysis, we made use of pairs of translation equivalents, and calculated, for each pair, the Jaccard index of the 20 nearest neighbor translations. That is, we calculated for each pair the ratio of the number of shared translation neighbors to the total set of neighbors in both languages. Of all semantic categories, perception verbs shared the fewest neighbors.

A second contrastive analysis was based on the correlations of the embeddings of the perception verbs with the embeddings of the words in the different categories. For each language, and for a given category, we calculated the mean of the correlations of all the word embeddings of perception verbs with the word embeddings of all the words in that category, henceforth *mean by-category correlation*. Mandarin revealed a preference for more abstract categories. Perception verbs in Mandarin have higher correlations compared to English for communication nouns, cognition nouns, phenomenon nouns, persons, and sports. By contrast, words for plants, objects, animals, body parts, and colors tend to be somewhat more correlated with English perception verbs.

Finally, correlational profiles for individual perception verbs proved useful for clarifying differences in the meanings of near-synonyms. For example, *guān-kàn* is typically used in the context of sports. In English, *sound* and *smell* show marked preferences for evaluative adjectives. The methods proposed in this study makes it possible to trace subtle differences in lexical semantics across languages and are offered in the hope that they will prove a useful complement to existing methods such as behavioral profiling.

In conclusion, the method proposed in this study makes it possible to trace subtle differences in verbal semantics across languages.

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Categorical Learning and the Cognitive Foundations of Language Evolution and Development

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Keywords: categorical learning, comparative cognition, neural bases, language evolution

Categorical Learning is an important foundation of language development (Ibbotson 2020). Here we aim to shed light on the evolutionary origins of human categorical learning and its evolutionary roots shared with non-human animals. Bringing together comparative cognitive and behavioral data on the one hand, and data on its neurological bases on the other, we stress the importance of categorical learning in language evolution. The reviewed data suggest that categorical learning itself is a mosaic of underlying mechanisms and human categorical learning evolved to combine different processes of category formation. Our view fits in with a model of language evolution that describes language as a mosaic of different cognitive processes that form an integrated system, with the individual elements having an evolutionarily continuous trajectory.

In invertebrates, honeybees have been shown to be able to learn certain abstract conceptual distinctions (Avarguès-Weber et al. 2012). In birds, a large amount of data with various types of stimuli have been recorded on categorical learning in pigeons (Huber 2001). Furthermore, using RB-II (rule-bases and information-integration) dissociative tasks, by which the rotation of the dimensional axis from II to RB will tell whether strong and rapid learning occur in the tested species, categorical learning in pigeons show no significant advantage of RB over II in both forward and backward learning (Smith et al. 2011). This is in contrast with primates including humans, who display RB preference to II (Smith et al. 2012). However, only humans can easily transfer their rule knowledge to new stimuli (Smith et al. 2016). This suggests that vertebrates exhibit a continuum in terms of multiple systems for categorical learning (Smith et al. 2012).

From a neural perspective, as an evolutionarily conserved neural system, the basal ganglia system has been identified as a major contributor to category learning in animals, especially when it comes to navigation and the tracking of visual cues (Mizumori et al. 2009). Studies have shown that animals with intact basal ganglia systems perform better at difficult associative learning tasks than those without them (Ashby & Ennis 2006). The basal ganglia play an important role in the acquisition and storage of information in order to make informed decisions to recognize and categorize patterns based on learned environments. Consequently, abnormalities within this area can lead to deficits in recognizing categories and responding to stimuli with consistent behavior. In humans, basal ganglia-mediated category learning involves a process in which cognitive control of the prefrontal cortex and striatum is used to assign categories to objects or stimuli in order to recognize them more quickly and efficiently (Avarguès-Weber et al. 2012). This has been found to be especially beneficial for rapid reporting on information in a timely fashion and differentiating among similar objects to improve decision-making. Additionally, basal ganglia-mediated category learning can help to automate tasks that use repeated patterns, allowing for greater efficiency when performing them.

As these data indicate, integrating comparative and neural perspectives on categorical learning can help elucidate the structure and evolution of this ability central to language development and development.

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What *you need to know* is what I argue:
On the (inter)subjectivity of Mandarin Chinese discourse marker *yàozhīdào*

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Keywords: discourse marker, subjectivity, intersubjectivity, textual function, Chinese

Recent studies on the (inter)subjectivity of modal expressions and discourse markers (DM) highlight the relationship between (inter)subjectivity and textuality (e.g., Narrog 2012, Ghesquière et al. 2012, Traugott 2022). This paper analyzes the development of the (inter)subjective and textual functions of the Mandarin Chinese DM *yàozhīdào* from the perspective of (inter)subjectification. *Yàozhīdào* originates from the combination of the modal verb *yào* for 'need,' and the verb *zhīdào* 'to know', which literally means '(you/we) need to know something,' as in (1) below. Previous studies have identified *yàozhīdào* as a DM used to introduce some background information and to remind the hearer to pay attention to it (e.g., Liu 2013, Li 2015), as in (2).

(1) Wǒmen yídìng ***yào zhīdào*** wǒmen de shāngpǐn shì mài gěi shéi de.
we certainly need know we GEN good COP sell DAT who EMP
'We must know to whom our goods are sold.'

(2) Dāngshí Sòng Qìnglíng xīnzhōng de kǔchǔ, jīhū bú yàyú jǐnián qián zhàngfū Sūn Zhōngshān qùshì gěi tā de jùdà dǎjī. ***Yàozhīdào***, Sòng Qìnglíng duì zìjǐ de zhège dàdìdi céngjīng shì duōme de qìzhòng, bìngqiě jìtuō le duōdà de xīwàng a!
'The pain in Soong Ching Ling's heart at that time was scarcely less than the huge blow from her husband Sun Yat-sen's death a few years before. ***Yàozhīdào*** (you need to know this), because of how highly Soong Ching Ling used to think highly of her brother, and how much hope she placed in him!'

The interpersonal (intersubjective) and textual dimensions of *yàozhīdào* have received the most attention in the literature (e.g., Liu 2013, Li 2015). However, as shown in (2), by introducing the background information (i.e., Soong Ching Ling used to think highly of her brother and had invested high hopes in him), and by attracting the hearer's attention with *yàozhīdào*, the speaker's ultimate purpose is to provide a basis for the assertion made in the previous sentence (i.e., the loss of her brother deeply hurt Soong Ching Ling) and thereby make the argument more persuasive. In other words, *yàozhīdào* essentially functions as a device for justifying the speaker's assertion, conveying the speaker's subjective attitude toward the content of the discourse (see also Zhu 2019).

Moreover, as is also pointed out in the literature, *yàozhīdào* has acquired some functions in creating casual or adversative relations between the discourse units, which contributes to the coherence of the discourse. For example, in (2), the unit introduced by *yàozhīdào* can be seen as the reason why the speaker makes the assertion in the previous discourse, with *yàozhīdào* functioning as a causal connective.

The case of *yàozhīdào* shows that, synchronically, the subjective, intersubjective and textual dimensions are inextricably linked, although the subjective one seems to be more essential in *yàozhīdào*. Diachronically, the development of the DM *yàozhīdào* manifests the extension from the intersubjective imperative ('you need to know') to subjective and textual meanings, which indicates the limitations of the unidirectional hypothesis of (inter)subjectification (Traugott and Dasher 2002, Traugott 2003) and the diversity of the extension among the three dimensions.

Abbreviations

COP	copular	EMP	emphatic
DAT	dative	GEN	genitive

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Hemispheric dominance of metaphor processing for Chinese-English bilinguals: DVF and ERPs evidence

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Keywords: Metaphor processing; Chinese-English bilingual; Hemispheric dominance; Divided-visual-field; Event-related potential

Abstract: Figurative language such as metaphor has aroused the interest of researchers for centuries as metaphors are pervasive in our daily life. However, the studies investigating the lateralization of metaphor processing have gained conflicting findings. The hemispheric dominance of second language metaphorical processing is even less clear and only scarcely studied. This study investigated whether metaphors are predominantly processed in the right or left hemisphere when using Chinese and English metaphors in Chinese-English speakers. The role of familiarity in processing of metaphorical and literal expressions in both the first and second language was studied with brain-event-related potentials using a divided-visual-field paradigm.

Twenty-five Chinese-English bilinguals participated in this experiment. They were asked to perform plausibility judgments for Chinese (L1) and English (L2) familiar and unfamiliar metaphorical and literal sentences. The behavioral results show that participants consume longer time when understanding unfamiliar metaphoric sentences than unfamiliar literal sentences, which are both longer than familiar literal and familiar metaphorical sentences in both languages. Moreover, it takes longer to understand English expressions than Chinese in all sentence conditions which shows a L1 advantage. Meanwhile, the EEG results obtained using parameter-free cluster permutation statistics suggest a different pattern of brain responses for metaphor processing in L1 and L2, and that both metaphoricity and familiarity influence the brain response pattern of both Chinese and English metaphor processing. However, the brain responses were distributed bilaterally across hemispheres, suggesting no clear evidence for lateralization of processing of metaphorical meanings.

The results obtained using parameter-free cluster permutation statistics suggest a different pattern of brain responses for metaphor processing in L1 and L2, and that both metaphoricity and familiarity influence the brain response pattern of both Chinese and English metaphor processing. However, the brain responses were distributed bilaterally across hemispheres, suggesting no clear evidence for lateralization of processing of metaphorical meanings. This is inconsistent with the Graded Salience Hypothesis and Fine-Coarse Semantic Coding Theory, which posited a right hemisphere advantage of non-salient and coarse semantic processing.

End credits

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