Spatial Concepts and Patterns of Extended Spatial Description in Contemporary Japanese

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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.

References

Blasi, Damián E., Joseph Henrich, Evangelia Adamou, David Kemmerer & Asifa Majid. 2022. Over-reliance on English hinders cognitive science. *Trends in Cognitive Sciences*. https://doi.org/10.1016/j.tics.2022.09.015.

De Deyne, Simon, Steven Verheyen & Gert Storms. 2016. Structure and organization of the mental lexicon: A network approach derived from syntactic dependency relations and word associations. In Alexander Mehler, Andy Lücking, Sven Banisch, Philippe Blanchard & Barbara Frank-Job (eds.), *Towards a theoretical framework for analyzing complex linguistic networks*, 47–74. Berlin: Springer Berlin Heidelberg.

Kobozeva, Irina Mikhailovna. 2000. Grammar of Spatial Description. In Nina Davidovna Arutyunova & Irina Borisovna Levontina (eds.), *Logicheskiĭ analiz i͡azyka : i͡azyk prostranstv*, 152–162. Moskva: I͡Azyki russkoĭ kul'try.

Lancichinetti, Andrea, Filippo Radicchi & José J. Ramasco. 2010. Statistical significance of communities in networks. *Phys.Rev.E* 81(4).

Levinson, Stephen C. 2003. *Space in language and cognition: explorations in cognitive diversity* (Language, Culture, and Cognition). Cambridge: Cambridge University Press.

Talmy, Leonard. 1983. How Language Structures Space. In Herbert L Pick & Linda P Acredolo (eds.), 225–282. Boston, MA: Springer US. https://doi.org/10.1007/978-1-4615-9325-6_11.

Taylor, Holly A. & Barbara Tversky. 1996. Perspective in spatial descriptions. *Journal of Memory and Language* 35(3). 371–391. https://doi.org/10.1006/jmla.1996.0021.