Denominal and deverbal eventuality-related nominalizations from a discriminative perspective

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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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