

## **One form, two meanings: On the semantics of the specific and the generic masculine in German**

Research of the last two decades has repeatedly shown that masculine generics in German exhibit a masculine bias (e.g. Gabriel et al., 2008; Gygax et al., 2008; Irmen & Kurovskaja, 2010; Koch, 2021; Misersky et al., 2019; Stahlberg & Sczesny, 2001). That is, grammatically masculine role-nouns (e.g. *Lehrer*, ‘teacher’ / ‘teachers’) can refer to men and women, but may favour an interpretation in which only men are considered as potential referent (Misersky et al., 2019).

While previous studies are consistent in finding such a male bias for masculine generics, very few of them offer a theoretical account on the underlying nature of this bias (e.g. Irmen & Linner, 2005). Up to this point, no attempt has been made to find out whether there are connections between the male bias and the representations of masculine generics in the mental lexicon.

This is what the present paper offers. Using the general ideas of distributional semantics (e.g. Harris, 1954) as a framework, the following questions are explored: Are masculine generics generic or do they show a bias? If a bias is found, how can we explain it in terms of underlying representations in the mental lexicon?

To answer this question, the following method was employed. An 830,000 sentence (1.7 million words) corpus of contemporary German was created using the Leipzig Corpora Collection (Goldhahn et al., 2012). The corpus included 120 target word pairs which were based on the set of words used in Gygax et al. (2008). Target words were grammatically masculine role nouns and their grammatically feminine counterparts. All target word occurrences were manually checked for their usage, i.e. whether they were generically or specifically intended, and annotated accordingly. The corpus was then used to train semantic vectors based on the Rescorla-Wagner equation (Wagner & Rescorla, 1972) as implemented by naïve discriminative learning (e.g. Baayen & Ramscar, 2015).

As a general result, the semantic vectors of masculine generics show a bias towards the grammatical masculine, i.e. the masculine specific. Further cosine similarity analyses show that the generic masculine is overall semantically more similar to words denoting males, e.g. *Mann*, ‘man’. A rank order correlation analysis corroborates this finding.

Our results indicate that the male bias of masculine generics in German is due to the underlying representations of masculine role-nouns in the mental lexicon. That is, even though they may be intended to be generic, their resonance with the lexicon, i.e. more specifically with masculine specifics, leads to an overall biased association with male referents.

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