

# One form, two meanings? The semantics of generic and specific role nouns in German



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# Generic masculines are clearly biased towards male semantics

## Background & Motivation

- traditionally, generic masculines in German are assumed to be gender-neutral [cf. 1]
- however, psycholinguistic research has shown that generic masculines are comprehended as biased towards male referents [e.g. 2-3]
- recently, computational methods resulted in findings in line with psycholinguistic studies [4-5]
- however, the computational implementations come with two major issues

- issue 1:** the semantic vectors of the MASCULINE and GENERIC were strongly correlated
- issue 2:** genericity, i.e. GENERIC vs. SPECIFIC, was treated as an inflectional feature, which it is not
- aim:** solve these computational issues

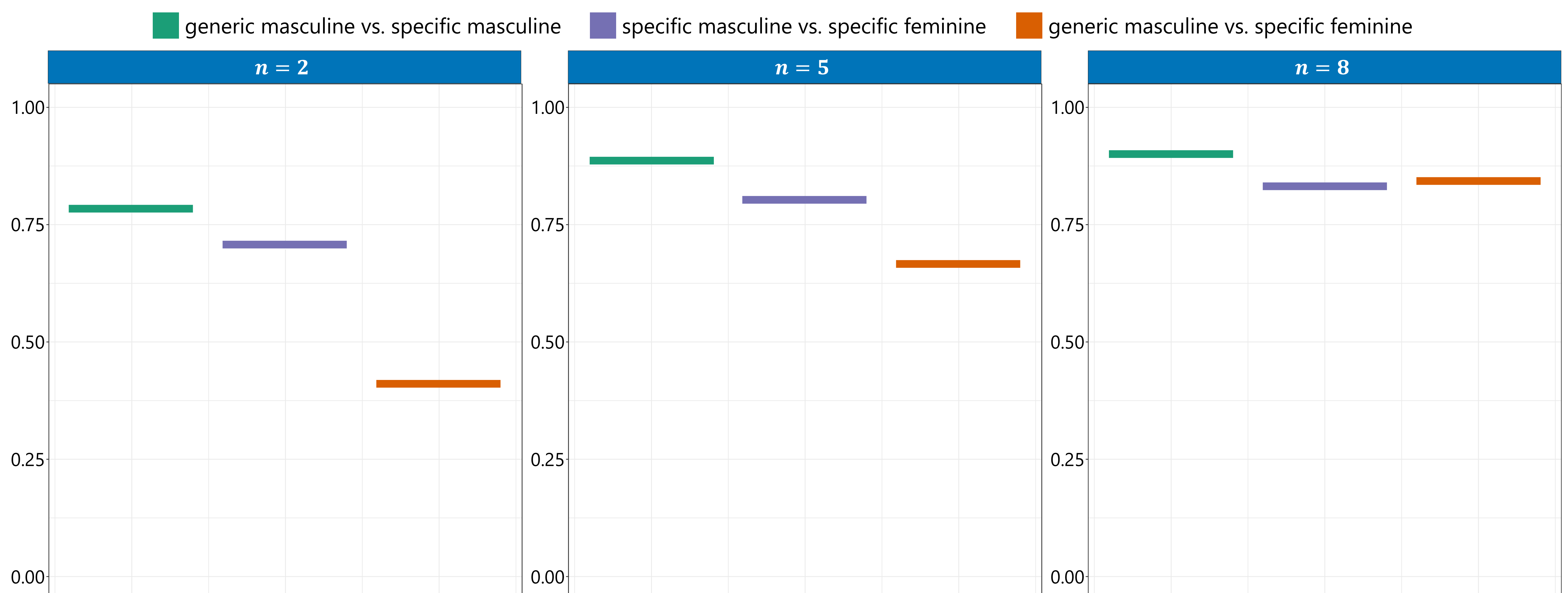
## Methods & Results

### Instance Vectors

- the mean vector of  $n$  content words preceding and following a target word token [6]
- computed with  $n = 2$ ,  $n = 5$ , and  $n = 8$  to check for influence of context window size
- computed based on semantic vectors generated by fastText [7]
- cosine similarity as measure of semantic similarity between vectors of target words

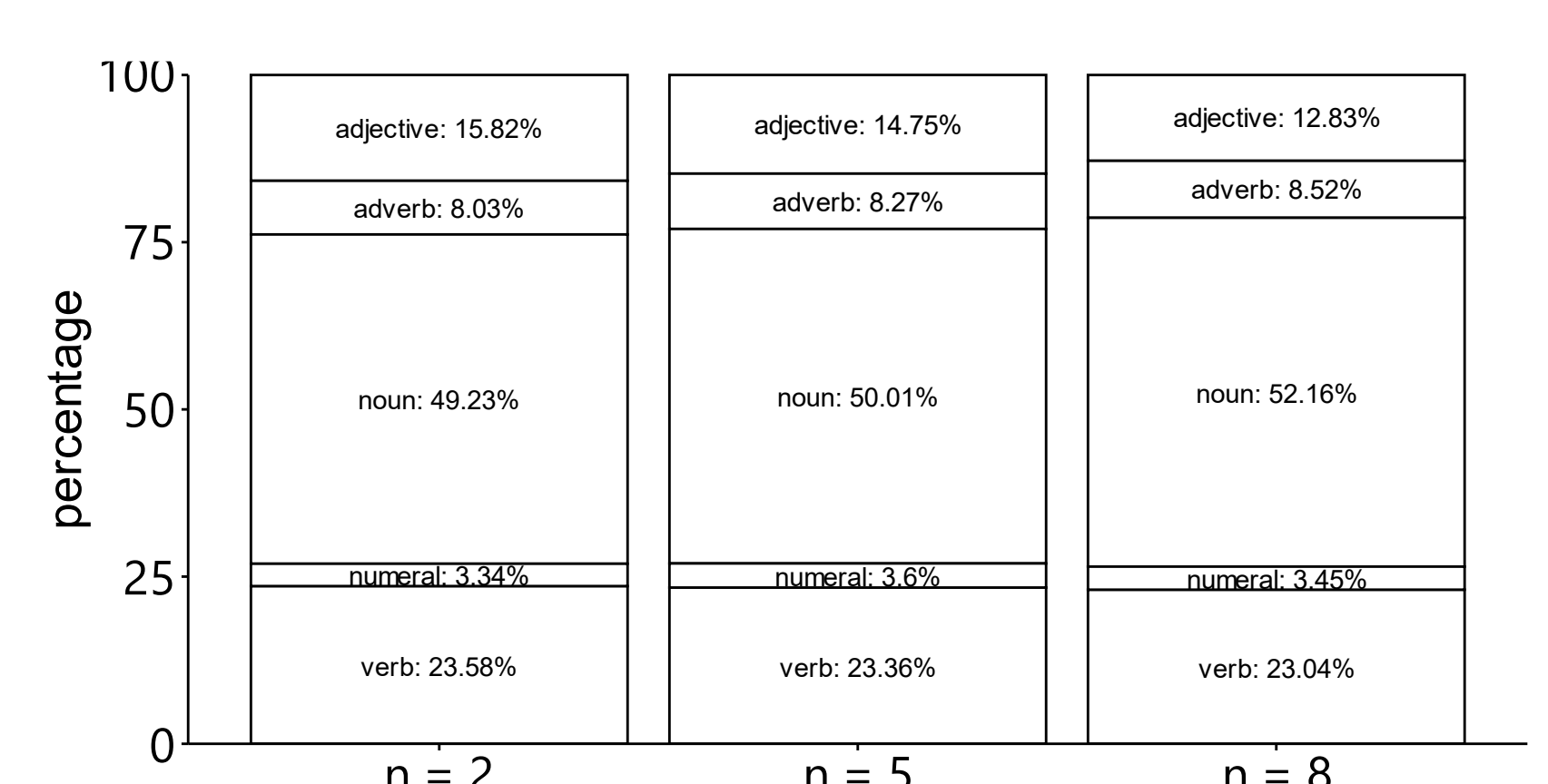
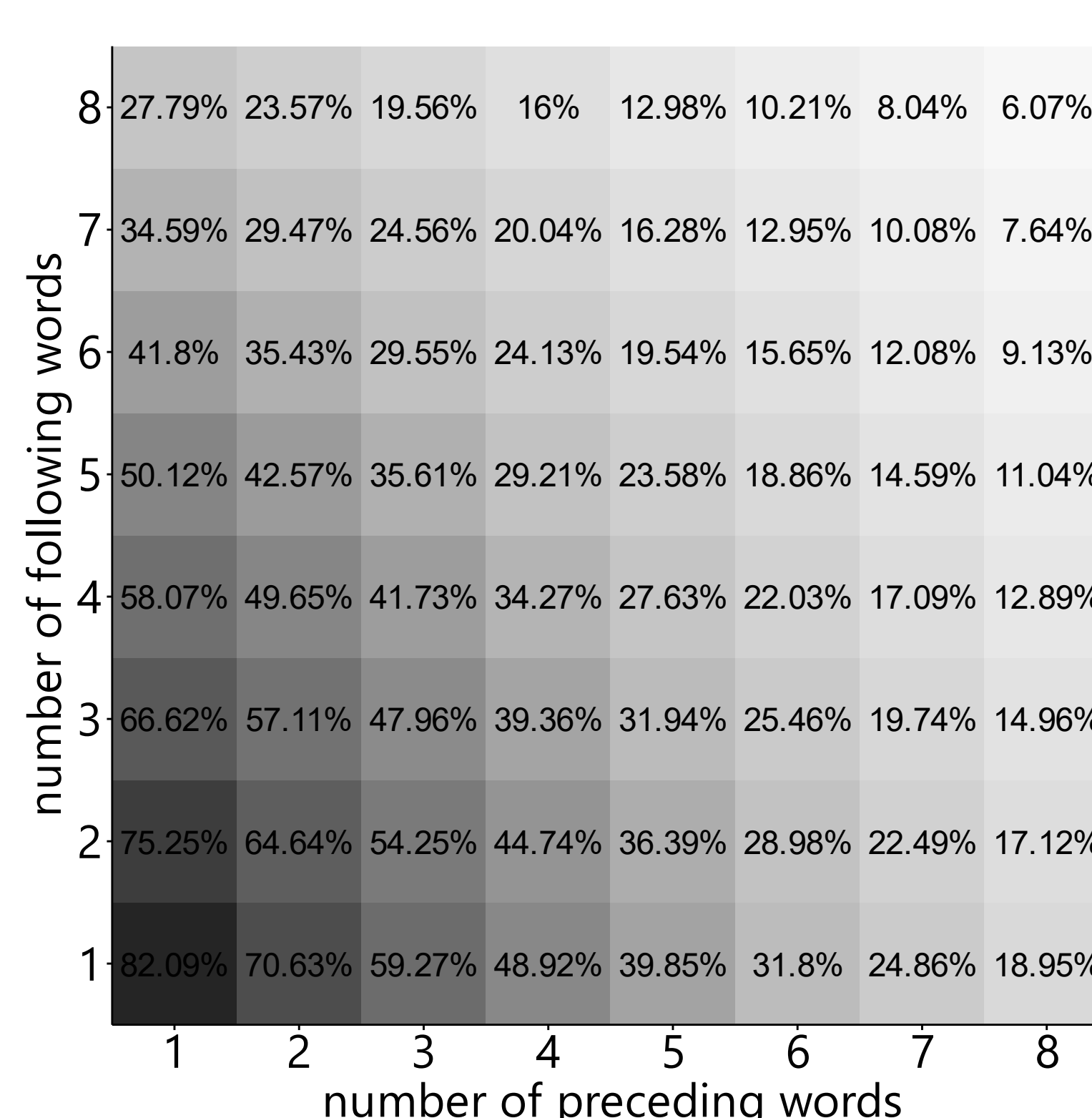
### Analysis

- beta regression in generalised additive mixed models predicting cosine similarity [8]
- predictor of interest is the COMPARISON that belongs to a given cosine similarity value



## Discussion

- generic masculines are semantically closer to specific masculines than to specific feminines → male bias
- findings in line with previous psycholinguistic [2-3] and computational research [4-5]
- the male bias in generic masculines in German is stable across a variety of linguistic methods
- computational methods are a meaningful tool for research on semantic genericity and gender-neutrality



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