

Homophonous semantic minimal pairs differ in their subphonemic acoustic durations: The case of generic and specific masculines in German

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Previous research on English showed that subphonemic durational variation is modulated by lexical and morphological differences, for example, in different types of word-final /s/ (Schmitz et al., 2021), in homophonous free and bound (pseudo-)stems (Engemann & Plag, 2021), and in homophonous words (Lohmann, 2018). The present study takes research on subphonemic differences one step further and asks: are there subphonemic durational differences in phonologically, morphologically, and lexically identical members of semantic minimal pairs?

To answer this question, a sentence reading task on German was conducted. Target words were generic masculines and specific masculines ending in *-er*, e.g. *Bauarbeiter* ‘construction worker’, fillers were feminine counterparts. All items were preceded by a context and embedded in a sentence, with similar contexts and sentences for the forms of the same item. Each participant ($n = 16$ thus far, at least 40 in total) produced 30 targets each (currently $n = 468$, 12 data points were excluded due to stutter).

The duration of the *-er* suffix was analysed in linear mixed-effects models. The predictor of interest was the type of masculine (generic vs. specific); included covariates were number, definiteness, speech rate, preceding and following segment type, stereotypicality, phonological neighbourhood size, bigram probability, target, and speaker. The results showed that generic masculines come with longer *-er* durations than specific masculines ($p < 0.001$, *Cohen's d* = 0.85, see Figure 1).

The present findings add to the body on subphonemic durational differences unaccounted for by established theories of speech production (e.g. Kiparsky, 1982; Roelofs & Ferreira, 2019). It appears that in addition to morphological and lexical differences, fine-semantic differences just as well may influence the fine-phonetic realisation of segments in their duration. Overall, the present study contributes to the evidence calling for revisions in our understanding of speech production and its influences.

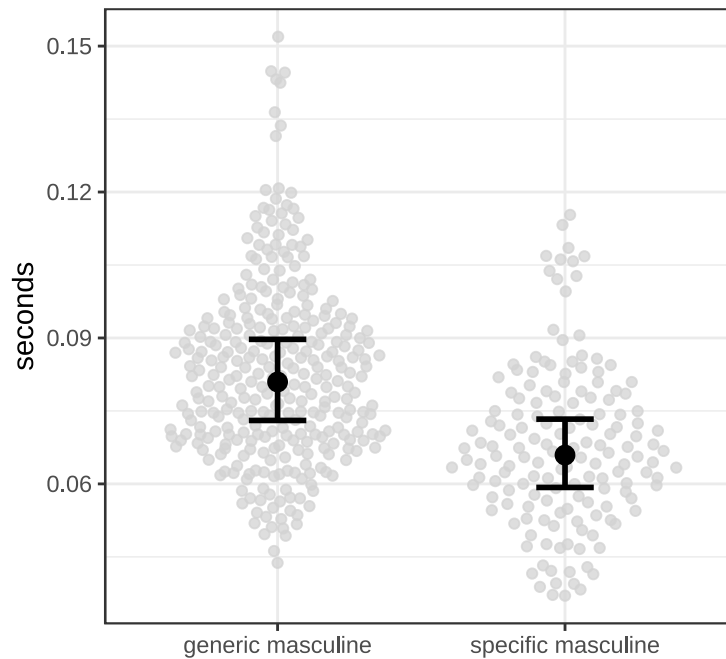


Figure 1. Effect of type of masculine as predicted by the linear mixed-effects model. Black dots represent the predicted mean, whiskers represent the 0.95 confidence intervals, light grey dots represent predicted data points.

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