Will Carla apply for this job, or just Carl? – What user interactions with job listings reveal about the effects of gender-sensitive language on male and female representations

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The question of whether the use of gender-sensitive language has a measurable impact on hearers and readers in evoking the conceptualization of female persons is probably among the most controversially debated issues in linguistics and beyond. This is especially true for studies on person reference in German. German is a gender language, i.e. each noun has a specific grammatical gender, which in the case of nouns referring to persons usually corresponds to biological and/or social gender: *Der Mann* 'the man (masculine)', *die Frau* 'the woman (feminine)', but also *das Mädchen* 'the girl (neuter)'. Role nouns typically exist in pairs in German (Diewald 2018), e.g. *der Linguist* 'the linguist (m.)' – *die Linguistin* 'the linguist (f.)'. In contexts in which the gender of the referent(s) is unknown or in which one refers to a group of referents of different genders, so-called masculine generics tend to be used in everyday language, e.g. *Linguisten sind klug* 'Linguists are smart'. However, it is a hotly debated question to what extent grammatically masculine forms are actually interpreted in the intended gender-neutral sense. A number of psycholinguistic studies suggest that the masculine form is more likely to elicit mental representations of men than of women, creating a male bias (e.g. Stahlberg et al. 2001, Gygax et al. 2008, Keith et al. 2022, Körner et al. 2022). A recent corpus study using distributional semantics has lent further support to this hypothesis (Schmitz et al. forthc.). It has been argued that this male bias can entail social consequences, which is a hypothesis that has been explored in a number of small-scale studies investigating the language used in job listings. For instance, the results of a hiring-simulation experiment by Horvath and Sczeny (2015) indicate that women who apply for a job are less likely to be perceived as fitting a position by potential employers if the text advertising the position uses masculine generics. Vervecken et al. (2013) found that female primary school students were less likely to state that they felt competent to do a specific job if the job description used only the masculine form.

To the best of our knowledge, no large-scale, data-driven study has been conducted so far that tests whether the use of gender-sensitive language in job listings also leads to an increased interest in the position by persons who identify as female. Our study aims at filling this gap. Based on data provided by the recruitment platform StepStone, we evaluate whether job advertisements using different kinds of gender-sensitive language in their job titles correlate with higher proportions of views by female users. Our data consist of 964,689 German language job listings that have been viewed 118,187,849 times altogether (mean = 121 views per listing, sd = 157.7). Importantly, these data allow for taking differences between various sectors into account, as different branches still show considerable differences in the proportion of female employees. In addition, different types of gender-sensitive language can be taken into account. Apart from mentioning both the masculine and the feminine form, a number of graphemic variants are widespread in German, e.g. the use of so-called morpheme separators as in *Linguist*innen, Linguist:innen, Linguist_innen*, or the use of sentence-internal capitalization as in *LinguistInnen*. In addition, neutral forms such as *Lehrende* 'techers', lit. 'teaching (persons)' or *Pflegekraft* 'nurse' and, more rarely, purely graphemic devices such as *Lehrer** can be used, where the asterisk <*> is supposed to mark gender-neutrality.

We fit a binomial logistic regression model to the data, with gender as the response variable and the job sector (e.g. administration, health, IT/Engineering) as well as the type of gender-sensitive language as predictor variables. Our results indicate that compared to masculine generics (the baseline), all types of gender-sensitive language lead to a slight but significant increase in female views, but the effect is particularly strong when terms are used that include the female suffix *-in*. These results come with a number of caveats: For one thing, for reasons of privacy and anonymity, we only have access to aggregate data, which means that we cannot know how many *different* individuals have viewed the job listings in question, and are unable to add random effects for individual viewers, which would make our model more reliable. For another, we cannot exclude the possibility that employers advertising jobs that are stereotypically associated with female employees are more prone to use gender-sensitive language than employers advertising stereotypically "male" positions. Given the size of our dataset, however, we are confident that despite these potential confounds, our results do allow for some tentative conclusions regarding the behavioral effects of different types of gender-sensitive language and, indirectly, their underlying cognitive representations. In particular, our results support previous research indicating that masculine generics are strongly tied to male representations, and additionally suggest that female representations are strongly tied to explicitly feminine forms with the suffix -*in*.

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