The Impact of Stereotypes and Noun Endings on Processing Gender in English: Comparing Native and Non-Native Performance

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This study aimed at establishing whether the perception of the noun endings *-er* and *-or* as masculine carries over into English for native speakers of German. Since German is a language with a grammatical gender system (Hellinger & Bußmann, 2003), professions which end in *-er/-or* identify a person as male in German (e.g. *der Gärtner* – 'the [male] gardener') while in English, they are not grammatically marked for gender. Thus, it is possible that Germans might still perceive professions ending in *-er/-or* in English as more male. Alternatively, they might switch to an English native speaker view and judge professions based on their stereotypical associations instead, a phenomenon that has been established in various studies (e.g. Gygax, Gabriel, Sarrasin, Oakhill, & Garnham, 2009).

Participants read short texts while their eye movements were recorded. 60 stimuli with three sentences each like (1) were constructed. The first sentence introduced an occupational noun which varies in its stereotypical association (with males or females) between conditions. The third and final sentence then either included 'men' or 'women', referring back to the occupational noun in the first sentence.

> (1) During the last month, the **stockbrokers/hairdressers** tried to get the business going. Recently, it had gotten a bad reputation. But two of these **men/women** had a brilliant idea that would turn the ship around.

Professions were taken from Misersky et al. (2014) who had native speakers of seven languages rate them for stereotypicality. The strength of the associations was balanced for each stimulus set, so that nouns with, for instance, strong masculine associations would be paired with nouns with strong feminine associations. Beyond that, professions ending in *-er* in English were contrasted with those that ended in *-or* and those that had endings which rarely occur in German (such as *-ian*).

The data were analysed using linear mixed-effects models, controlling for word length and frequency. Results from 64 participants (40 German, 24 English native speakers) showed that stereotypical associations significantly influenced reading behaviour, with incongruent combinations leading to longer trial reading times. The differences were more pronounced for native speakers of German, especially with stereotypically feminine role nouns, suggesting a stronger male bias.

Moreover, first pass reading times for stimuli that included 'women' were significantly higher than those that contained 'men', especially for native speakers of German (figure 1). These reading times decreased as the experiment progressed, however, suggesting that while the participants showed a male bias in the beginning, this was attenuated by exposure to stimuli that contained 'women'.

In addition, the results indicate that *-er* may slightly, but *-or* more considerably, slow down processing for German speakers when used with 'women'. This effect is visible in longer trial reading times (figure 2) and regressions on the second spill-over region, i.e. three to four words after the critical region (figures 3 and 4). Therefore, these findings suggest transfer effects, in line with models of bilingual processing which allow for interactions between the two systems, e.g. MacWhinney's competition model (2005), or assume one system, e.g. Hudson's word grammar (2008).

References

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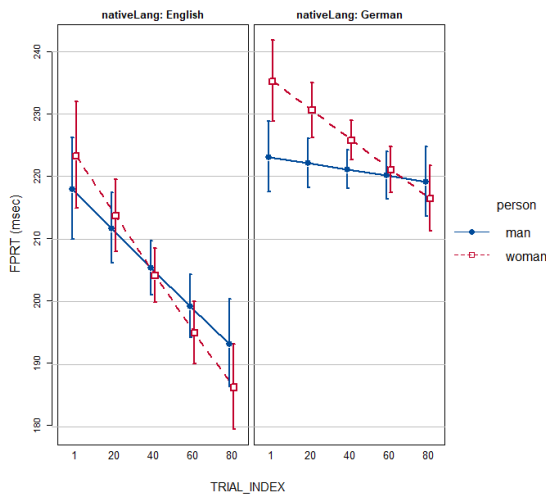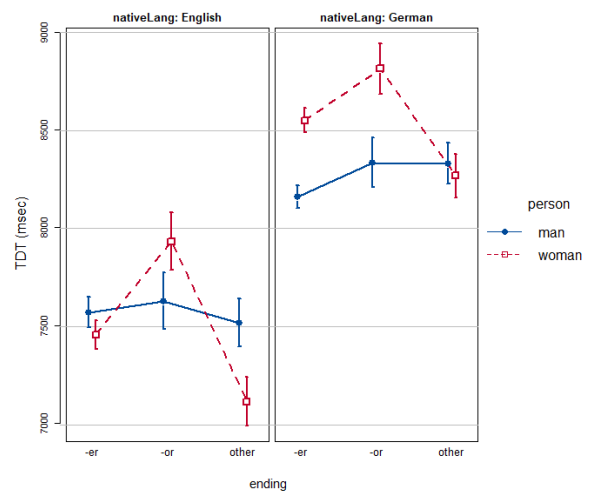
Figure 1: First pass reading time by L1

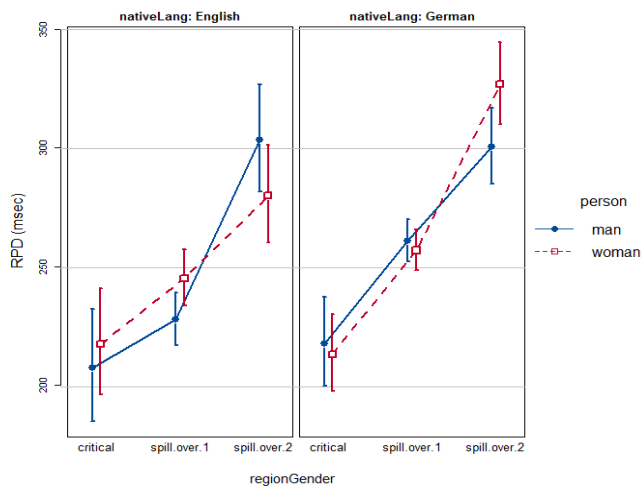Figure 2: Trial reading time by ending and L1
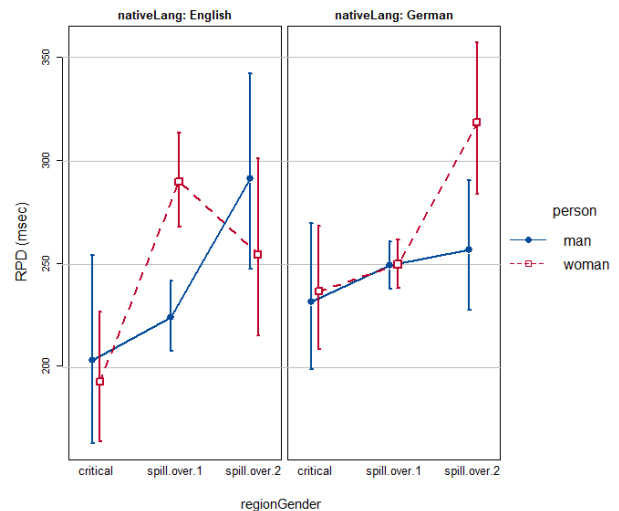

Figure 3: Regression path duration by L1, "-er"

Figure 4: Regression path duration by L1, "-or"

Please note: Results are collapsed over stereotypes, the strength of which was balanced within the stimuli sets.