



Syntactic Gender and Conceptual Knowledge

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Abstract

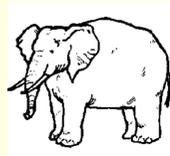
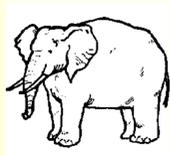
Many languages assign an arbitrary syntactic gender to every noun. For example, “Elefant” is masculine in German, regardless of an elephant’s actual gender. Does syntactic gender influence the way Germans conceptualize animals and objects? Prior research suggested that syntactic gender does influence how speakers of Romance languages conceptualize animals, and possibly objects, in tasks that allow for deliberative processing, but analogous effects were not found for German speakers (Sera et al., 2002; Vigliocco et al., 2005). In contrast, we report syntactic gender effects for German speakers in a Stroop task, designed to assess implicit conceptual knowledge.

Experiments

German Stroop Experiment: Equal numbers of masculine, feminine, and neuter German nouns were pronounced in isolation by two male and two female native speakers. Participants were required to identify the gender of the speaker as fast as possible. Task adapted from Green & Barber (1981).

English Stroop Control: English translations of the German nouns were pronounced in isolation by two male and two female native English speakers.

Animated Movie Experiment: Line drawings of the same nouns were presented with two of three actors (man (masculine), woman (feminine), and little girl (neuter in German)). The German gender option was always included as a choice. Each picture appeared twice so that it appeared with both types of mismatching photos. German and English participants were instructed to choose the picture corresponding to the actor that they would like provide a voice for the animal/object in an animated movie. Task adapted from Sera et al. (2002).



Predictions

We predicted Stroop interference, for German participants only, when speaker gender did not match the syntactic gender of the word. Because this task taps implicit processes, we expected to see equal interference for animals and objects.

For the movie task, we predicted that German participants would be more likely to choose the actor that matched the syntactic gender of the animal, with smaller gender effects for objects. However, Sera et al. (2002) failed to find such effects in German children, using a similar task.

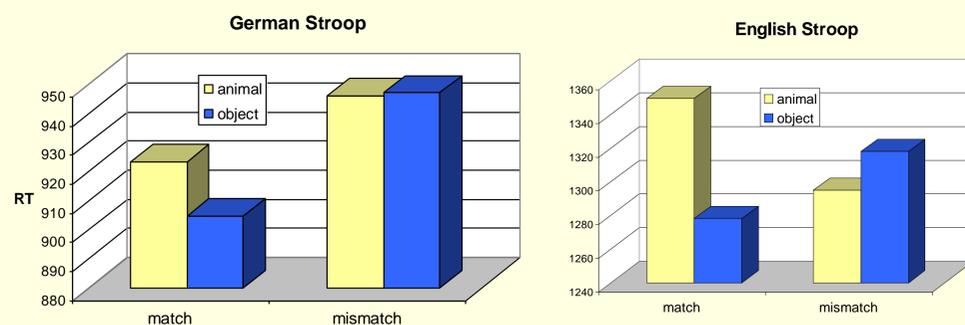
Conclusions

Even German speakers who have been living in an English-speaking environment show effects of syntactic gender in our Stroop task—effects that cannot be explained by the use of language-neutral conceptual/perceptual features. The Stroop results suggest that syntactic gender impacts both implicit and explicit conceptual processing across a wide range of languages, though syntactic gender effects in deliberative processing tasks may be more limited. Prior failures to find effects of German gender in deliberative tasks (like our movie paradigm) suggest that deliberative processing tasks depend upon a straightforward mapping between natural gender and syntactic gender, as in two-gender (masc/fem) languages, with stronger syntactic gender effects for animate entities.

References

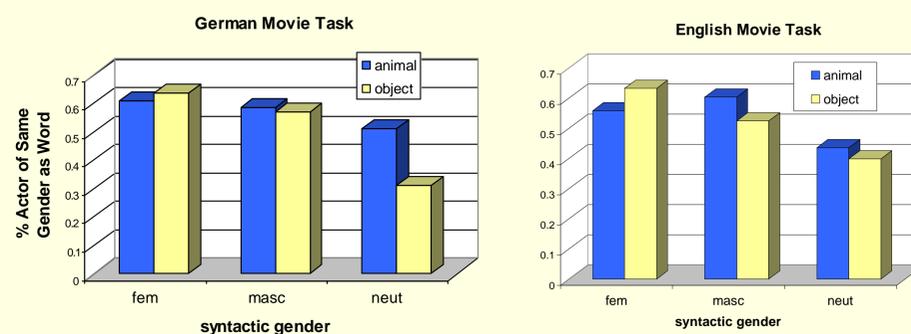
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Results (Stroop Test)



We analyzed only the trials using masculine and feminine nouns. German participants were faster when the voice and noun matched in gender [$F(1,15) = 24.15, p < .001$]. The effect did not interact with concept type (animal vs. object). English participants exhibited no advantage for the nouns whose syntactic gender (in German) matched the gender of the voice.

Results (Animated Movie Task)



For German speakers, there was a main effect of syntactic gender [$F(2, 28) = 8.24, p < .01$]: participants tended to pick the same-gender actor for masculine and (especially) feminine animals/objects, but not for neuter animals/objects. There were more gender-matched choices for animals than for objects [$F(1,14) = 8.76, p < .05$], with the biggest difference between animals and objects in the neuter condition [interaction: $F(2,28) = 6.89, p < .01$].

In contrast to the Stroop task, English speakers showed the same overall pattern and a high level of consistency in the actor choices for individual animals/objects. Thus, performance on this task seems to be driven by conceptual/perceptual features of the pictures (which are correlated with syntactic gender) rather than by syntactic gender per se.