

Syntactic Ambiguity and Gender Stereotype in Translation

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We report here an eye-tracking experiment designed to investigate the processing of stereotypical gender in combination with syntactic ambiguity in translation. Stereotypical gender nouns (e.g. *nurse*) were contrasted with definitional gender nouns (e.g. *queen*) in which gender information is part of the definition of the word. It remains unclear to what extent such nouns share processing constraints.

In relative clause attachment ambiguity (e.g., *someone shot the servant of the actress who was standing on the balcony*), the relative clause can be interpreted as being attached to either the first noun (N1) in high attachment (*the servant was standing on the balcony*) or the second noun (N2) in low attachment (*the actress was standing on the balcony*). Previous studies have provided evidence for cross-linguistic variation in prevalent attachment preferences, for example, speakers of English have been shown to favor low attachment (N2 disambiguation) while Bulgarian speakers tend to opt for high attachment (N1 disambiguation). In highly proficient Bulgarian-English bilinguals the two biases contradict each other.

In a study of 16 highly proficient Bulgarian-English bilinguals, nouns of three classes (definitional, stereotypical, balanced gender) embedded in complex English sentences with relative clause attachment (RCA) ambiguity and their Bulgarian translations were presented for verification in a 2 (Context Bias: N1 bias vs. N2 bias) x 2 (Translation Bias: N1 vs. N2 disambiguation) design. The verification task involved translation judgments of the relative clauses which disambiguated in favor of either the first (N1) or the second (N2) noun. Half of the definitional and half of the stereotypical nouns were with a male bias (e.g., king, soldier) and the other half with a female bias (e.g., queen, nurse).

The results show a high overall positive verification rate for translations (M=76.1%) without a clear preference for either N1 disambiguation or N2 disambiguation in translations. Thus, no stable general bias to high vs. low attachment could be found. Since English syntactic preferences are dominated by an N2 (low attachment) bias, and some studies point out that Bulgarian speakers' bias is towards N1 (high attachment) disambiguation, the lack of a specific bias among these bilingual speakers can be interpreted in terms of a hybrid model of bilingual syntax. As predicted, mean percent positive verification was higher in conditions where the context bias and the translation bias matched, e.g., in translations, the RC agent was interpreted as the referent of that noun (N1 or N2) which was supported by sentential context more often than in conditions where translations disambiguated towards the noun unsupported by context (F=14.45, p=.000). Furthermore, while the percent verification did not depend on the gender category of either noun (male, female, or neutral), it was affected reliably by the gender class of both N1 and N2 (gender-definitional, gender-stereotypical, gender-balanced). Gender-stereotypical nouns were associated with more positive verification generally, i.e., participants were more willing to accept flexibility in stereotypes than in definitional gender. These results indicate that stereotypical gender can be overridden when gender is specified by

sentence context, unlike lexically defined definitional gender. However, whereas the gender class did not make much difference when the gender category was male (N2), it did produce a much higher proportion of positive verification choices with definitional than with stereotypical nouns when the gender category was female (83.59% vs. 66.67%), although the effect was only marginally significant ($F=3.29$, $p=.07$).

Preliminary analyses of overall gaze duration on the disambiguating relative pronoun confirm the effect of N2 gender class seen in the analysis of participants' choices above and add further insights into processing constraints and strategies. A significant translation bias by N2 gender type interaction reveals that participants looked longer at the relative pronoun when it disambiguated towards N1 while N2 was a gender-definitional noun, and when it disambiguated towards N2 when it was a gender-balanced referent ($F=4.71$, $p=.031$). A second significant interaction between translation bias and N1 gender shows that it was only when N1 was gender-definitional, but not gender-stereotypical or gender-balanced, that participants looked longer at the relative pronoun disambiguating towards the other noun (N2) than if it was disambiguating towards the same N1. We discuss the differences between these noun types and their implications for the representation and processing of stereotypical gender, for example, to what extent this asymmetry supports a theoretical framework in which gender-definitional and gender-stereotypical nouns are seen as associated with different representations and processed in a qualitatively different way.