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Authors

Ding, Cui

Wilcox, Ethan Gotlieb

Oguz, Metehan

et al.

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How does dependency type mediate gender agreement in Russian?

Cui Ding

University of Zurich, Zurich, Switzerland

Ethan Wilcox

ETH Zurich, Zurich, Switzerland

Metehan Oguz

University of Southern California, Los Angeles, California, United States

Zuzanna Fuchs

University of Southern California, Los Angeles, California, United States

Abstract

Natural languages often exhibit agreement, where two words must be matched for certain features. It's well known that people use knowledge about agreement to drive expectations during online processing. What is less well known is how the type of dependency mediates this expectation and thus the processing difficulty of a gender-mismatched word. To test this, we collect incremental processing data on three types of gender agreement mismatches in Russian: (i) past-tense verbs and subjects, (ii) attributive adjectives and nouns, (iii) predicate adjectives and nouns. We collect two types of incremental processing data: eye-tracking and Mouse-Tracking-for-Reading (MoTR), in which a participant reveals and reads text by moving their mouse, whose position is recorded. We find that while participants are surprised by ungrammatical conditions, this is mediated both by the type of agreement as well as the gender of the agreeing noun.