Processing Russian Heteronyms in Sentential Context: The Role of Case Morphology and Sentence Structure

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We report two self-paced reading studies on the ambiguous forms (heteronyms) of Russian nouns, differentiated in speech through word stress, e.g. uCHItelja.TEACHER.GEN/ACC.SG and uchiteLJA.TEACHERS.NOM.PL. Since word inflection is a reliable cue to syntactic role assignment, the ambiguity affects the level of morphology and of syntactic structure. However, numeric advantage of the GEN over the NOM and the ACC and word order canonicity pre-empt two different syntactic parses (OVS vs SVO) when the heteronym is sentence-initial. We inquired whether the parser is aware of the multi-level ambiguity and whether the two conflicting factors (morphological and syntactic) can prime parallel access to several structural parses.

Twelve quadruples with animate and 12 with inanimate heteronyms were embedded in locally ambiguous sentence frames. The heteronymic condition was contrasted with the control one, where inflectional ending specified the noun’s morphology (muzikanta.musician.GEN/ACC.SG vs muzikanty.NOM.PL). The processing pattern in the control condition confirmed the facilitatory effect of the canonical SVO word order. In the heteronymic condition, animate and inanimate nouns patterned differently. The difference was consistent across the experiments. For inanimate nouns, there was a clear-cut reaction time advantage of NOM.PL used as sentential subject. For animate nouns, no difference between the heteronymic forms was observed. To provide a unified account of heteronym processing, several possibilities are discussed. To avoid being garden-pathed, the parser might activate the greatest number of syntactic alternatives possible. They converge in one stress pattern in inanimate nouns, but spread across two stress patterns in animate nouns. Alternative explanations will also be provided.

Keywords: ambiguity resolution, inflectional morphology, Russian.