Teasing apart retrieval and encoding interference in Russian reflexives

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In reflexive-antecedent dependencies, interference from structurally inaccessible noun phrases (distractors) that match a non-structural feature (e.g., gender) of the reflexive have been observed (e.g., Cunnings & Felser, 2013; Parker & Phillips, 2014). Badecker and Straub (2002), among others, have reported interference effects in reflexive-antecedent dependencies: in "Jane/John thought that Bill owed himself another opportunity...", *himself* was read slower when the distractor *John* was masculine. Such interference effects have been interpreted as cue-overload (i.e., the retrieval cues not pointing to a unique target) at the moment of retrieval. Hence, they were taken as evidence for a cue-based retrieval mechanism that uses non-structural cues such as gender to retrieve a reflexive's antecedent. However, as pointed out by Dillon (2011, 2013), the design of previous studies does not allow us to rule out encoding interference as an alternative explanation. In the working memory literature, it has been proposed that items with similar features compete during memory encoding and maintenance, leading to a degraded memory trace of the respective items (e.g., Nairne 1990). Although interference occurs at the moment of encoding rather than at the moment of retrieval, a degraded memory trace should also lead to increased retrieval latencies. Thus, encoding interference predicts longer reading times when the antecedent and the distractor are more similar (e.g., share the gender feature). Therefore, for the materials used in previous experiments, encoding and retrieval interference make the same predictions.

Russian has both gender-unmarked (*sebja*) and gender-marked (*samogo/samu sebja*) reflexives. This allows us to directly pit encoding and retrieval interference accounts against each other: the former predicts interference from the gender-matching distractor irrespective of the reflexive type; the latter, on the contrary, predicts interference from the gender-matching distractor only when the reflexive is gender-marked. In a self-paced reading experiment (N=109), we manipulated reflexive type and match/mismatch in gender between the antecedent and the distractor.

Aferistka$_i$,   kotoruju **torgovec/torgovka** nanimaet dlja ograblenija, **sebja$_i$/ samu sebja$_i$** serjozno
The swindler$_{(fem)}$ whom   a merchant$_{(fem/mask)}$ hires   for a robbery,   herself-$_{ACC(Ø/fem)}$ significantly
pereotsenivaet v   sposobnosti k obmany.
overestimates   in the ability   to do trickery.

The interaction between the reflexive type and match/mismatch condition at the word following the reflexive was significant: in gender-marked reflexives, a gender-matching distractor led to significantly faster reading times whereas in gender-unmarked reflexives no effect was observed.

These results are inconsistent with the encoding interference account, since no interference from gender-matching distractor was found in the unmarked-reflexive condition. Retrieval interference as implemented in the cue-based retrieval model proposed by Lewis and Vasishth (2005) can explain the results (and analogous results by Cunnings and Felser [2013], and Sturt [2003]) under the assumption that at the moment of retrieval activation of distractor is higher than that of the actual antecedent.