Discourse prominence and antecedent mis-retrieval during native and non-native pronoun resolution

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We report the results from an eye-movement-monitoring-during-reading study investigating the role of antecedent prominence in native (L1) and non-native (L2) pronoun resolution in German. Pronoun resolution is thought to involve cue-based memory search and retrieval [1], which may sometimes lead to feature-matching but grammatically illicit antecedents being retrieved, especially if these are discourse-prominent [2]. There is evidence suggesting that the resolution of reflexive anaphors is more prone to interference from discourse-prominent antecedents during L2 compared to L1 sentence processing [3]. The current study extends this research by examining the processing of personal pronouns in grammatically constrained ('Principle B') configurations. We investigated how the discourse saliency of grammatically illicit antecedents affects the likelihood of them being considered for coreference construal during real-time processing.

Method. Participants included 48 German native speakers (mean age: 27 years) and 48 advanced L2 learners of German (mean age: 27 years) with Russian as their L1. Our experiment had a 2x2 design with the factors Prominence (*prominent, non-prominent*) and Gender (*match, mismatch*), with only the grammatically illicit antecedent being manipulated. Stimulus materials included short texts introduced by a context sentence. The second, critical sentence contained an object pronoun and two c-commanding subject NPs as potential antecedents (see 1a-d). According to binding Principle B, NP1 (e.g. *Otto* in example 1) but not NP2 (e.g. *der Direktor* 'the manager' in 1a,c) is a grammatically licit antecedent for the masculine singular object pronoun *ihn* ('him'). In all experimental conditions, the illicit antecedent was rendered highly elaborate through relative clause modification. In (1a,b) the illicit antecedent's discourse prominence was increased through first-mention and by introducing it as the subject of the context sentence.

Results. For L1 speakers, the eye-movement data showed significant main effects of Gender in regressions out of the pronoun and spillover regions, and in regression-path times at the spillover region, indicating that this group experienced interference from the illicit antecedent (NP2) after encountering the pronoun. The likelihood of mis-retrieval was not modulated by the illicit antecedent's discourse prominence, however. A different pattern was seen in our L2 group, who showed significant interactions of Gender and Prominence in first-pass times and total reading times at the pronoun region. The observed interaction patterns indicate that L2 speakers were more likely to mis-retrieve the illicit antecedent if it was discourse-prominent compared to when it was not. Both the L1 and L2 speakers demonstrated perfect sensitivity to binding Principle B in a post-experiment untimed questionnaire task, however.

Discussion. Our results show that real-time pronoun resolution is affected by the presence of grammatically illicit antecedents during early processing stages in both L1 and L2 comprehension. This is the case at least for antecedents that are highly elaborate, which is thought to result in stronger memory representations [4]. Our results moreover confirm and extend earlier findings suggesting that L2 comprehenders are more sensitive to extra-sentential discourse information than L1 comprehenders during processing [3, 5]. This suggests that discourse-level information may be differently weighted in native compared to non-native processing.

(1a)　PROMINENT, GENDER-MATCH
Ein kompetenter Direktor leitete die Firma.
Otto glaubte, dass **der Direktor**, **der** zuverlässige Kontakte
in Schweden suchte, **ihn** schon bald anrufen würde.

(1b)　PROMINENT, GENDER MISMATCH
Eine kompetente Direktorin leitete die Firma.
Otto glaubte, dass **die Direktorin, die** zuverlässige Kontakte
in Schweden suchte, **ihn** schon bald anrufen würde.

(1c)　NON-PROMINENT, GENDER MATCH
Eine gewaltige Konkurrenz bedrohte die Firma.
Otto glaubte, dass **der Direktor, der** zuverlässige Kontakte
in Schweden suchte, **ihn** schon bald anrufen würde.

(1d)　NON-PROMINENT, GENDER MISMATCH
Eine gewaltige Konkurrenz bedrohte die Firma.
Otto glaubte, dass **die Direktorin, die** zuverlässige Kontakte
in Schweden suchte, **ihn** schon bald anrufen würde.

'{A competent manager$_{masc/fem}$ directed the company. / An enormous competition threatened the company.} Otto thought that the manager$_{masc/fem}$, who$_{masc/fem}$ was searching for reliable contacts in Sweden, would call him very soon.'

References

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