

BINDING OUT OF RELATIVE CLAUSES IN L1 AND L2 COMPREHENSION

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The availability of a bound variable reading for pronouns normally requires the binder to c-command the pronoun (Reinhart, 1983), but exceptions to this requirement have frequently been noted. For a pronoun to co-vary with a non c-commanding quantifier phrase (QP) - a phenomenon known as 'telescoping' (Roberts, 1989) - is also possible for QPs within relative clauses (RCs) under certain conditions (e.g. Radó et al., 2019). To obtain a telescoping reading a semantic representation must be computed in which the QP's semantic scope does not correspond to its surface scope. Syntax-semantics mismatches of this kind can provide useful test cases for claims regarding possible differences between native (L1) and non-native language (L2) processing (compare e.g. Boxell et al., 2017). Here we will report the results from two experiments investigating whether, and when during processing, L1 and L2 speakers of German allow for a pronoun to be linked to a non c-commanding QP.

In EXPERIMENT 1, 63 L1 German and 50 L1 Russian/L2 German speakers read short stimulus texts such as in (1) below, with their eye movements recorded at a sampling rate of 1000Hz. In the critical second sentence, the pronominal subject (*er* 'he') of a finite complement clause was preceded by two potential antecedents, a c-commanding definite noun phrase (DP) and an object QP embedded within a subject RC. Using a gender-mismatch paradigm with the factors DP MATCH and QP MATCH resulted in four experimental conditions (1a-d). If L2 speakers have more difficulty establishing non-isomorphic syntax-semantics mappings in real time compared to L1 speakers (e.g. Boxell et al., 2017), then telescoping effects should be smaller or absent in the L2 group. However, if L2 speakers are more prone to similarity-based interference than L1 speakers (Cunnings, 2017), they might in fact try to link the pronoun more readily to a non c-commanding QP than the latter.

The analysis of the eye-movement data revealed clear group differences: L1 speakers considered the QP as an antecedent from early processing stages onwards, as witnessed by QP gender-mismatch effects at the critical pronoun region in 1st pass reading times, right-bound and regression-path times, in the absence of DP gender effects. QP gender effects were modulated by DP gender only in later eye-movement measures and sentence regions. The L2 group, on the other hand, showed DP gender-mismatch effects in later eye-movement measures and little evidence of considering the QP. Our L1 results confirm and extend earlier findings showing that telescoping dependencies can readily be established during L1 comprehension, but they contrast with the results from previous studies indicating that L1 English speakers do not attempt to link a pronoun to a non c-commanding subject QP during processing (Cunnings et al., 2015; Kush et al., 2015).

Given that previous studies on English used QPs in subject position, in EXPERIMENT 2 we examined whether this apparent discrepancy might be due to object QPs being able to scope out of RCs more easily than subject QPs. 40 L1 German and 41 L1 Russian/L2 German speakers took part in an offline antecedent judgement questionnaire administered via the world-wide web. Participants were asked to decide, for each of the two potential antecedents in sentences such as (2a,b) below, whether or not they could be interpreted as antecedents of the pronoun *er* ('he'). The QP antecedent was either in object (2a) or subject position (2b). Both L1 and L2 speakers judged embedded object QPs to be acceptable antecedents more often compared to subject QPs (L1: 43% vs. 23%; L2: 37% vs. 31%), but this between-condition difference proved statistically reliable for the L1 group only.

Taken together, our results show that L1 German speakers attempt to link pronouns to non c-commanding object QPs quickly during comprehension. The subject-object asymmetry observed in Experiment 2, along with the absence of telescoping effects in previous studies using subject QPs, lends support to a syntactic approach to telescoping out of RCs whereby raising a subject QP out of an RC incurs a grammatical violation (Radó et al., 2019: 411). Telescoping readings were also available to L2 speakers, but during processing our L2 speakers were drawn towards the more distant DP antecedent, showing no evidence of being able to compute telescoping dependencies in real time, or of QP interference.

- (1) *Der Schlosspark war riesig gross.*
'The castle park was extremely large.'
- a. DP MATCH, QP MATCH
Der König, der jeden Gärtner kannte, war überzeugt, dass er mehr Bäume pflanzen sollte.
- b. DP MATCH, QP MISMATCH
Der König, der jede Gärtnerin kannte, war überzeugt, dass er mehr Bäume pflanzen sollte.
- c. DP MISMATCH, QP MATCH
Die Königin, die jeden Gärtner kannte, war überzeugt, dass er mehr Bäume pflanzen sollte.
- d. DP MISMATCH, QP MISMATCH
Die Königin, die jede Gärtnerin kannte, war überzeugt, dass er mehr Bäume pflanzen sollte.
- 'The king/queen, who knew every gardener_{MASC/FEM}, was convinced that he should plant more trees.'
- Dann würde es mehr Vögel im Park geben.*
'There would be more birds in the park then.'
- (2) a. OBJECT QP
Der Förster, der jeden Gärtner kannte, war überzeugt, dass er mehr Bäume pflanzen sollte.
'The forester, who knew every gardener, was convinced that he should plant more trees.'
- b. SUBJECT QP
Der Förster, den jeder Gärtner kannte, war überzeugt, dass er mehr Bäume pflanzen sollte.
'The forester, who every gardener knew, was convinced that he should plant more trees.'

References

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