

## Antecedent retrieval during the processing of Dutch reciprocal pronouns

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Local antecedent-anaphor dependencies (e.g. reflexives [1], and reciprocals [2,3]) do not seem as susceptible to interference effects as subject-verb agreement is [3,4]: The morphological features of structurally inaccessible ‘distractor’ NPs rarely affect processing of anaphors and occasional effects manifest in different directions across experiments. The absence of interference is surprising in cue-based parsing models, such as Lewis & Vasishth (2005), which predict partial-match interference should occur regardless of dependency type. A possible explanation for different interference profiles in previous studies is that target NPs of anaphors had a higher baseline activation than distractor NPs due to word order. In most studies, the critical anaphor immediately followed the verb, which induces reactivation of the target NP. SOV languages provide an opportunity to test this hypothesis, since the target NP, the distractor, and the anaphor can all occur pre-verbally. Kush & Phillips (2014) investigated antecedent retrieval for reciprocals in Hindi, an SOV language. They found no evidence for facilitative interference, though there was evidence of a small inhibitory effect from a matching distractor. However, the absence of clear interference effects may have arisen for two orthogonal reasons: First, distractors were deeply embedded, lowering their prominence below levels required for interference [6]. Second, the experiment had low statistical power.

We sought to investigate reciprocal licensing in an SOV language using a design that improved upon the shortcomings of K&P (2014). To this end we conducted a self-paced reading experiment testing for interference during the processing of the Dutch reciprocal *elkaar*, which requires a local (Principle A, [8]), plural antecedent. In our items, the critical reciprocals were oblique arguments of three-place predicates. The factors **Grammaticality** and **Distractor Number** were manipulated through number-marking on two NPs preceding the reciprocal. Grammaticality was manipulated on the object of the main verb (*the singer(s)* in 1), which was the structurally accessible antecedent for the reciprocal. The intervening distractor NP (*the fan(s)*) was embedded as subject inside a RC attached to the object NP. This position can yield interference effects [1], and is more prominent than the distractor position in K&P’s items. Dutch V2 word order ensures that no main clause verb intervenes between antecedent, distractor, and reciprocal pronoun, eliminating the probability of selective reactivation of the grammatical target NP. Furthermore, distractors in subject RC position have been observed to yield interference effects [1], and they have higher prominence than the distractors in K&P’s materials, increasing the size of possible interference effects [6]. A possible concern is that the target NP is retrieved, and thereby reactivated, at the RC verb (*applauded*), even though it is not its subject. However, even when assuming this is the case, there is still no baseline advantage for the target NP, since the distractor NP is in any case also retrieved at the RC verb, being its subject.

**Results** (N=45, 7 observations per participant per condition) Statistical analyses (linear mixed-effect regression with maximal random effects) on log-transformed reading times (figure 1) reveal no significant effects in the reciprocal region. In the post-reciprocal region we observe a main effect of Grammaticality ( $t=2.96$ ). We found no significant main effect of Dist. Number, nor a Grammaticality\*Dist. Number interaction. These results suggest that the apparent immunity of reciprocal pronouns to interference effects cannot fully be ascribed to baseline activation differences induced by an intervening main clause verb.

1. Bart | had | **de zanger/s**, | voor wie | **de fan/s** | hartstochtelijk | had/hadden  
*Bart had<sub>SG</sub> the singer/s, for whom the fan/s passionately had<sub>SG</sub>/had<sub>PL</sub>*  
| geapplaudisseerd, | gisteren | aan elkaar | voorgesteld | tijdens een | repetitie.  
*applauded, yesterday to each.other introduced during a rehearsal.*

## References

[1] Dillon, B., Mishler, A., Sloggett, S., & Phillips, C. (2013). *JML*; [2] Badecker, W., & Straub, K. (2002). *JEP*; [3] Cunnings, I. & Sturt, P. (2018). *CUNY*; [4] Jäger, L.A., Engelmann, F, Vasishth, S. (2017). *JML*; [5] Lewis, R. L., & Vasishth, S. (2005). *Cogn. Sci.*; [6] Engelmann, F., Jäger, L. A., & Vasishth, S. (2018). *Manuscript submitted to Cogn. Sci.*; [7] Kush, D. & Phillips, C. (2014). *Frontiers*; [8] Chomsky, N. (1986). Greenwood Publishing Group.

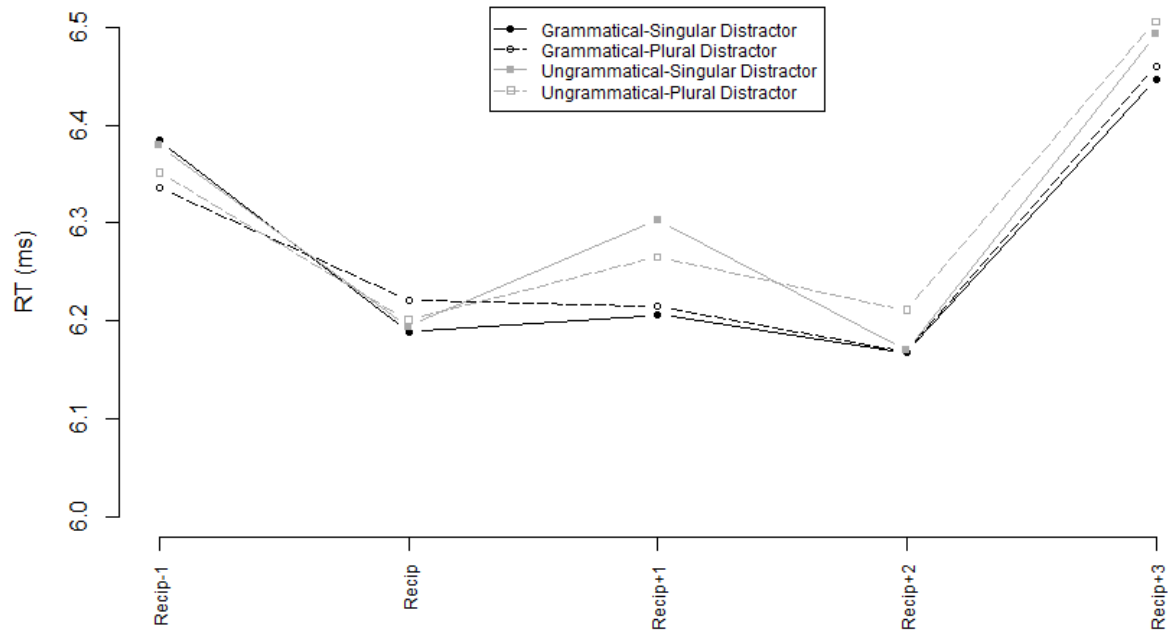


Figure 1: Average region-by-region reading times for the pre-reciprocal region and subsequent regions.