Proactive Interference in Anaphoric Dependency Resolution: Evidence from Chinese
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I. Introduction

- Resolving reflexive-antecedent dependencies requires the parser to consult syntactic constraints like C-command within the binding domain (Sturt 2001; Xiang et al. 2009; Dillon et al. 2013).
- The syntactically correct retrieval target is sometimes accompanied by one or more syntactically uncleaved retrieval candidate(s) as distractor(s).
- The retrieval target can also be accessed by matching non-syntactic cues such as gender and animacy (Badger & Straub 2002; Fiser et al. 2009; Cummins & Fiser 2013).

II. Interference Type

- Experimental evidence supporting cue-based retrieval (Lewis & Vasishth 2005) often comes from the interference effect.
- Distractors can appear between the target and retrieval site or before the target.
- Retroactive Interference: Antecedent Distractor Reflexive
- Proactive Interference: Distractor Antecedent Reflexive
- The majority of previous studies focused on retroactive interference. (J. Van Byle & McElree, 2000; Cummings & Fiser, 2013)

III. Experiment

- A self-paced reading experiment with 60 native Mandarin Chinese speakers.
- Four experiment conditions in a 2 x 2 factorial design: 24 sets of conditions; 26 fillers with argument reflexive Ziji or its compound form Ta-Ziji (himself, herself) at various places in a sentence; 70 other fillers.
- A long-distance binding exists between Ziji and its antecedent. Embedded subjects are inanimate and are not candidates for retrieval. Chen, Jager and Vasishth (2012) found the interference effect at Ziji and following regions in non-local conditions.
- The distractor and the retrieval target are in the same item stem (c.f. Jager, Engemann & Vasishth, 2015).
- Distractors, either animate or inanimate, locate within a temporal phrase and appear either before or after of the retrieval target.

IV. Results

- A linear mixed model ( Bates & Sarkar, 2007) was fitted with items and participants as crossed random factors.
- The similarity-based interference and the linear order between distractor and Ziji (Interference Type) are treated as fixed effects.
- The interaction between the two fixed effects indicate whether the interference type interacts with the interference effect size.
- Reading times in three critical regions were analyzed. Ziji and two segments after Ziji.
- 2.89% data points that are either smaller than 100 ms or larger than 2000 ms are trimmed as outliers.
- Answers to comprehension questions have a 97.3% accuracy rate. No significant effect found in answers' latencies.

V. Conclusions

- These results are in support of cue-based retrieval in resolving anaphoric dependencies. The animacy feature match between the distractor and Ziji leads to additional processing difficulties.
- Even when the distractor appears before the antecedent, the proactive interference increases the processing time of Ziji.
- No interaction between the distractor location and the interference-effect size asks for further investigation of the role of distractor prominence in similarity-based interference.