

Effects of Referential Structure in English Pronoun Resolution

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This research explores the mechanisms underlying multiple pronoun resolution in comparison to single pronoun resolution, focusing on differences in *referential structure* – whether all or only one of the referents in the preceding clause is mentioned with a pronoun. This research aims to answer three questions: (i) whether and how the process of multiple pronoun resolution differs from that of single pronoun resolution; (ii) what factors contribute to effects of referential structure; and (iii) how multiple pronouns are interpreted during real-time processing.

Experiments 1, 2, and 3 investigate the first question and test two hypotheses about the potential effects of referential structure on pronoun resolution. *The independence view* assumes that each pronoun's anaphoric dependencies are resolved fully independently, while *the dependence views* assume that there are interactions between multiple referential dependencies. Accordingly, pronoun interpretation is predicted to be sensitive to differences in referential structure type only in the dependence views, but not in the independence view. The results from three offline picture-writing tasks support the dependence view, showing that pronoun interpretation is indeed sensitive to referential structure type.

Experiment 4 addresses the second question and further examines what factors at different levels of representation contribute to effects of referential structure by comparing three types of the dependence view (syntax-level, discourse-level, and syntax-discourse dependence view), based on the influence of syntactic and/or discourse factors. The results from an offline picture-writing task support the syntax-discourse dependence view, suggesting that both syntax (i.e., cue-based parallelism) and discourse factors (i.e., Centering Theory) contribute to the interactions between anaphoric dependencies of the two different pronouns, resulting in referential structure effects.

Experiment 5 investigates the last question by examining referential structure effects during real-time processing using a novel webcam-based visual-world eye-tracking method. Two competing hypotheses are tested regarding the timing of referential structure effects: *the immediate activation hypothesis* assumes that when the subsequent pronoun is encountered, the preceding pronoun's referential dependencies are retrieved immediately, while *the delayed activation hypothesis* assumes that the retrieval is delayed. The results indicate the early emergence of referential structure effects during the resolution of the subsequent pronoun (i.e., the immediate activation hypothesis), suggesting that the preceding pronoun's dependency information becomes available as soon as a comprehender encounters the subsequent pronoun.

In conclusion, this research provides novel evidence that multiple pronoun resolution is different from single pronoun resolution and that these differences stem from differences in referential structure – resolving the referential dependency of one pronoun can influence the resolution of dependency of another pronoun. Thus, the findings of this research highlight the need to consider referential structure in understanding pronoun interpretation.