

A processing model for ungrammatical verb phrase ellipsis

By now it is well-established that some verb phrase (VP) ellipsis constructions are acceptable even if the match between elided element and antecedent is not exact [Tanenhaus and Carlson, 1990, Arregui et al., 2006]. For instance, in example 1a the ellipsis site Δ matches the antecedent VP “funded by the university” whereas in 1b the antecedent is mismatched along the Voice feature; it is in the passive voice. Indeed the active version, “fund Jane’s project” does not literally appear anywhere in the sentence.

- (1) a. Jane’s project was funded by the university, and Greg’s project was Δ too.
b. Jane’s project was funded by the university, and the pharmaceutical company did, Δ too.
- (2) a. The report was critical of Roy, but Matt wasn’t Δ
b. The report was critical of Roy, but Matt didn’t Δ

This talk presents a formalized processing model that handles the kinds of mismatching ellipsis constructions in examples 1 and 2. The model is evaluated against the pattern of results obtained in an acceptability study carried out using magnitude estimation [Bard et al., 1996]. Sentences with ellipsis and mismatched antecedents like 1b and 2b were compared to both matched-antecedent controls and non-ellipsis controls. The study finds effects of both Mismatch ($F(1,17)=99.2, p < .0001$) and Ellipsis ($F(1,17)=51.0, p < .0001$), and a Mismatch-Ellipsis interaction ($F(1,17)=61.7, p < .0001$) such that Mismatch had a greater impact on acceptability judgments when there was ellipsis in the second conjunct. The results are graphed in figure 1 overleaf. In addition, this study replicates the main contrasts reported by Arregui et al. Within Category mismatches, adjectival antecedents (2b) were rated worse than nominal antecedents (*The criticism of Roy was harsh, but Matt didn’t Δ*) ($t=3.49, p < .001$). Within Voice mismatches, passive-active order (1b) was rated worse than active-passive order (*The university funded Jane’s project, and Greg’s project was Δ too*) ($t=2.08, p < .05$).

The processing model is grammar-based. Extending Minimalist Grammars [Stabler, 1997] with hypothetical reasoning facilitates a formal expression of the traditional deletion-under-identity idea [Kobele, 2006]. However our model breaks with tradition by postulating a parameterized family of more permissive but also perceptually costly kinds of ‘identity.’ This computational perspective allows us to characterize the specific parser actions whose difficulty is reflected in the acceptability judgments and derives predictions that could be tested using online methods.

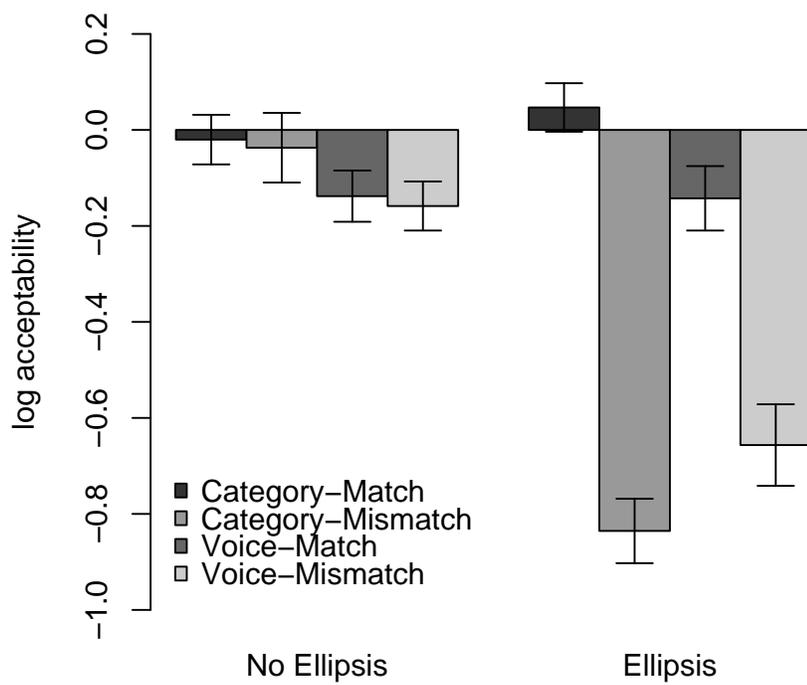


Figure 1: Log-transformed acceptability scores. Error bars are 95% confidence intervals.

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