

## A discourse explanation for ellipsis parallelism effects

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Verb phrase ellipsis is formed by omission of a verbal constituent, for which an interpretation must be supplied by context. Ellipsis acceptability appears to be conditioned on the syntactic structure of the antecedent clause, and various proposals implicate syntax in the processing of ellipsis. These hold alternately that ellipsis interpretation requires retrieval of syntactic structure [1,2], that non-parallel antecedents require post-retrieval 'repair' [2], and that the parser favors antecedents of a particular syntactic type [2,3].

An alternative view models ellipsis resolution as a form of discourse-based inference. While syntactic parallelism effects have traditionally posed a challenge for this approach, we propose a solution. We take as a starting point the resolution algorithm proposed in [4], which holds that the first step to interpretation is the identification of thematically parallel referents. We hypothesized that parallelism effects might be explained as a disruption of this crucial first step. We report findings from two self-paced moving-window reading time studies as evidence.

**Experiment 1** compared parallel and non-parallel ellipses following either a lexical NP or pronominal subject (1)-(2). Where syntax-based accounts predict a penalty for both non-parallel conditions, we predicted an interaction where only the lexical NP condition is affected. This follows because the pronouns were unambiguous, facilitating identification of parallel referents via co-reference. For lexical NPs, however, we predicted a lack of parallelism would make it harder to identify thematically parallel referents. Analysis of residual reading times in the target clause showed an interaction between parallelism and NP type at the target subject (consistent with the identification of linguistic focus in the lexical NP condition) and a main effect of NP type at the ellipsis site, where reading times were faster following pronominal subjects. No effects were observed in the spill-over region following the ellipsis, and notably, no main effects of parallelism were observed in any region.

For **Experiment 2** we predicted that the advantage seen previously at the ellipsis site for pronominal subjects might be eliminated using ambiguous pronouns. To that end we compared parallel and non-parallel ellipses following ambiguous and unambiguous pronominal subjects (3)-(4). Analysis of raw reading times in the target clause showed no effects at the target subject. At the ellipsis site, non-parallelism led to a reliable increase in reading times only in the ambiguous pronoun condition. This pattern suggests readers preferentially interpreted the ambiguous pronoun as co-referent with the subject of the antecedent clause, a reference pattern that was ultimately confirmed at the ellipsis region in the parallel condition, but not in the non-parallel condition. Unlike Experiment 1, a main effect of parallelism was observed in the spill-over region following the ellipsis.

These results demonstrate an *indirect* effect of syntactic parallelism on ellipsis processing, which is modulated by the referential properties of the subject NP preceding the ellipsis.

Exp 1 (n=48)	(1) The rangers didn't inspect the campsite as thoroughly as a. ...   the firefighters   did   after the   big blaze. b. ...   it   could have been   after the   big blaze.	[lexical NP, parallel] [pronoun, non-parallel]
	(2) The campsite wasn't inspected by the rangers as thoroughly as a. ...   the firefighters   did   after the   big blaze. b. ...   it   could have been   after the   big blaze.	[lexical NP, non-parallel] [pronoun, parallel]
Exp 2 (n=40)	(3) a. The interview wasn't conducted by the officers as quickly as b. The officers didn't conduct the interview as quickly as ...   it   could have been   at the   crime scene.	[unambiguous, parallel] [unambiguous, non-parallel]
	(4) a. The interviews weren't conducted by the officers as quickly as b. The officers didn't conduct the interviews as quickly as ...   they   could have been   at the   crime scene.	[ambiguous, parallel] [ambiguous, non-parallel]

### References

[1] Sag & Hankamer (1984) *L&P*, [2] Arregui et al (2006) *JML*, [3] Kim et al (2011) *Syntax*, [4] Dalrymple et al (1991) *L&P*.