Comprehension Priming Evidence for Elliptical Structures

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The structure question for ellipsis resolution

John played the violin, and Bill did __ too

The structure question: Is unpronounced syntactic structure recovered at the ellipsis site?
➢ Yes: the meaning of the ellipsis site is derived from syntactic structure (Sag 1976; Chung, Ladusaw & McCloskey 1995; Merchant 2001).
➢ No: the meaning of the ellipsis site is derived purely anaphorically via a semantic mechanism (Hardt 1993; Culicover & Jackendoff 2005).

Priming ambiguous structures

In the current study, we examine whether elliptical structures induce syntactic priming effects that modulate the argument-structure bias of the verb in a subsequently shown target sentence.

Effects of sentential complement (SC) verb bias
When comparing a locally ambiguous sentence such as '*The news reporter proclaimed the royal birth **was official…***' to their unambiguous control:
- Sentential-complement biased (SC biased) verbs induce slow-down on the embedded NP (*the royal birth*), compared to direct-object (DO)-biased verbs (Trueswell et al. 1993; Kennison 1996; Garnsey et al. 1997);
- But less cost on the disambiguating predicate after the embedded NP (*was official*), compared to DO-biased verbs (Ibid., a.o.).
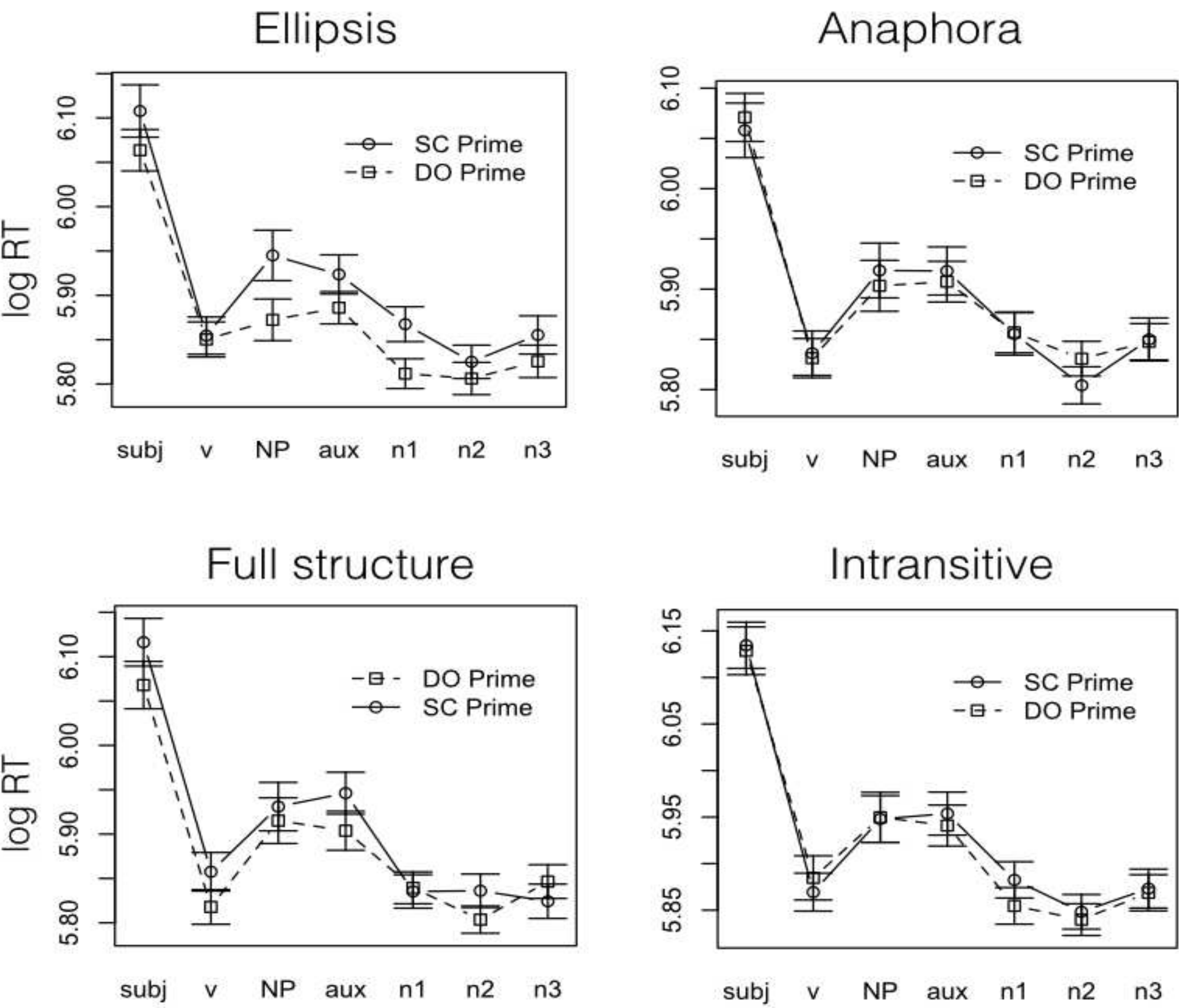
The current study
- If the ellipsis site is interpreted via syntactic structure, we expect a strong priming effect that shifts a DO-biased verb towards a more SC-bias (see example below).
- Such a priming effect should be strong for both elliptical and their parallel non-elliptical full-structure conditions; but it should be weaker in the anaphora and intransitive control conditions.

Summary and Conclusions:

- Elliptical structures pattern differently from their overt anaphora counterpart, suggesting different representations are recovered at the ellipsis vs. anaphora site.

- We take this to be preliminary evidence that syntactic structure from the antecedent is reactivated at the ellipsis site.

- This preliminary result from comprehension priming converges with our previous results from production priming (Xiang, Grove, and Merchant, submitted).

Results (n=72)

On the ambiguous NP:
- Mixed effects model: Prime Type (clause 1) x Continuation Type (clause 2) interaction p=0.06.
- Only for the ellipsis condition, there is a slow-down on the ambiguous NP when the prime is an SC structure (β=0.06, se=0.03, t=2.5).
- A few potentiali sources of the slow-down on the ambiguous NP
  ⬦ Structural revision in a lexical filtering model (Kennison, 1996).
  ⬦ Increased structural complexity of SC (Trueswell et al. 1993).
  ⬦ Preference to have an explicit complementizer (i.e., *that*) when a verb is more SC-biased (Trueswell et a. 1993).
  ⬦ If the priming effect only shifts a strong DO-bias towards a more neutral one, instead of to a strong SC-bias, it would increase the structural uncertainty on the ambiguous NP.

On the disambiguating predicate:
- There is no benefit of priming with an SC.
- Previous studies have found a speed-up on the disambiguating region for strongly SC-biased verbs. The current study only used DO-biased verbs in the target, and the priming effect may not be sufficient to shift these verbs to a strong enough SC-bias.

A remaining problem:
- The full structure, unlike the elliptical structure, did not induce a similar priming effect on the target sentence
- The repeated second clause in the full structure condition is unnatural, due to the repetition redundancy. To reduce repetition redundancy, we are conducting a follow-up study, in which a contrastive rather than parallel relation is established between the two clauses (e.g., *The town clerk was expected to certify the building certificate was forged, but at the town meeting she certified it was actually valid*).

Materials: 40 8-condition items (see an example below).
Centered self-paced reading; targets chunked into subject, verb, embedded NP, aux.
The ambiguous verbs are normed to be DO-biased (all verbs ≥50% DO completion in the norming study, subj n=50).

	Prime Sentence 1	Prime Sentence 2	
SC	The students planned to proclaim the funding news was false,	and later that year they did.	(Ellipsis)
DO	The students planned to proclaim the funding news,	and later that year they did it.	(Anaphora)
	Target: *The news reporter proclaimed the royal birth was official during the broadcast.*	and later that year they did proclaim the funding news was false./	(Full structure)
	subj v NP aux n1 n2 n3	and later that year they did proclaim the funding news.	
		and later that year they were afraid.	(Intransitive)