

Reanalysis as last resort revisited: Evidence from eye-tracking and the maze

We test whether contextual support can guide successful structural reanalysis in English *it*-clefts containing grammatical violations, or if comprehenders default to semantic coercion to preserve their initial parse. **Background:** Clefts obey *Tense Harmony* [1]: The Connected Clause's tense must semantically align with that of the matrix copula (1a). This is not agreement: present-tense copulas tolerate tense mismatches in the CC (1b) [2, 3]. Critically, (1a) is grammatical if the clause is parsed as a Relative Clause (RC) (1c), where tense is referential. Recent findings [4] show that Harmony violations (1a) (but not simple tense mismatch (1b)) incur significant processing costs, suggesting a strong CC bias. Yet these effects do not establish whether comprehenders ultimately reanalyze the structure to the grammatical RC, or instead coerce the semantics (e.g. interpreting *will* as 'was supposed to' (2)) to preserve the preferred, non-veridical, CC parse [5, 6]. Preliminary evidence from isolated sentences [7] favors coercion, in line with findings that the parser strongly prefers to maintain its initial commitments [8, 9]. This bias towards coercion is consistent with the finding that CCs and clefted-RCs have distinct prosodic contours [10], since successful reanalysis would require concomitant prosodic revision, a particularly costly operation [11].

This study: We test whether this resistance to reanalysis is absolute or can be overcome by contextual support [12]. If context guides parsing, RC-supporting contexts should reduce or eliminate the cost of Tense Harmony violations. If prosodic differences and the availability of coercion make reanalysis a last resort, even a strong context might not immediately facilitate reanalysis.

Methods: We conducted two experiments (G-Maze and eye-tracking, 40 identical items) using a 2*2 design: CONTEXT (RC-supporting vs. CC/Coercion-supporting) × TENSE (Match vs. Mismatch with matrix copula). RC contexts featured two referents of the same type (e.g. *two scientists*), making an RC parse felicitous. CC contexts featured distinct roles (e.g. *scientist* vs. *technician*) paired with future-oriented tasks (e.g. *was asked to*), supporting a CC parse and licensing semantic coercion. Participants provided acceptability judgments after each item.

Results Maze (n=54): clefted NP1 was read significantly more slowly in RC than CC contexts ($\beta=0.27$, $p<.001$, Fig 1A), confirming sensitivity to contextual cues. At critical auxiliary (*was/will*), Tense Mismatch reliably increased RTs ($\beta=0.31$, $p<.001$) and RC-contexts were consistently more disruptive than Coercion ones ($\beta=0.06$, $p<.001$). A significant TENSE*CONTEXT interaction ($\beta=-0.07$, $p=.0210$) indicated the mismatch penalty was modulated by context type. Acceptability judgments further showed that sentences under RC contexts had lower acceptability than under CC ones ($\beta=-0.24$, $p<.001$, Fig 1B). Even supportive contexts fail to facilitate the RC analysis. The relative ease of coercion is reflected in both shorter RTs and offline judgments.

Results Eye-tracking: Preliminary data (n=26; ongoing) replicate the Maze pattern. Across regions, RC Contexts produced reliably longer reading times, beginning in total time of NP1 and continuing through the late measures of VP and NP2 (Figs 2A–C), indicating strong bias towards CC analysis but no facilitation of RC reanalysis. Effects of TENSE emerged in later region and measures, with Mismatched Tense showing longer go-past and total times at NP2. Acceptability ratings also mirrored Maze results, illustrating higher ratings for CC than RC Contexts (Fig 2D).

Discussion: Previous work suggested that reanalysis of Tense Harmony violations is difficult without context. Our results demonstrate that even strongly supportive contexts fail to trigger it. RC-supporting contexts increased processing difficulty relative to Coercion contexts, indicating that readers did not adopt the grammatically licit parse. Instead, they persistently favored semantic coercion, recovering more easily when this was contextually supported. These results show that context cannot override a powerful structural commitment, especially when this requires concomitant revisions of implicit prosody [11], and reinforce the view that reanalysis towards a clefted Relative parse is a genuine last resort, dispreferred even when contextually licensed.

