

Asymmetries in voice-mismatched VP-ellipsis

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Introduction A critical testbed for theories of English VP-ellipsis (VPE) is provided by cases of voice mismatch between the antecedent and ellipsis clauses [1-4,6,7]. Whereas it is well-established that mismatched VPE (1a-b) is degraded compared to matched VPE (1c-d), studies have also found differences *within* mismatches [1,7,11]: [P → A] mismatches like (1a) (read: active ellipsis clause with preceding passive antecedent) tend to be more acceptable than [A → P] mismatches like (1b).

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| (1) a. | The report was first read by the judge, and then the lawyer did too. | Mismatch: [P → A] |
| b. | The judge read the report first, and then the confession was too. | Mismatch: [A → P] |
| c. | The judge read the report first, and then the lawyer did too. | Match: [A → A] |
| d. | The report was first read by the judge, and then the confession was too. | Match: [P → P] |

Here we evaluate two processing explanations of this MISMATCH ASYMMETRY that appeal to the relationship between the markedness of passives and working memory: the Recycling Hypothesis (RH) [1,2], and a recent content addressable memory (CAM) model [7]. The RH -- a processing theory that posits repair strategies for satisfying syntactic identity in cases of mismatch -- attributes the asymmetry to the markedness of the antecedent clause: since passive clauses are more likely to be misremembered as active than the converse [5], [P → A] mismatches are predicted to be more readily misremembered as [A → A] than [A → P] mismatches are as [P → P], yielding a stronger “illusion of grammaticality” (and hence higher acceptability) when the passive clause precedes the active clause. In the case of [7]’s CAM approach, ellipsis resolution is analogized to the processing of other syntactic dependencies [8,9], and the voice of the ellipsis clause is conjectured to be among the retrieval cues that help locate the antecedent, or, in the case of mismatch, hinder its retrieval. The CAM model invokes markedness by modeling passive voice as a misleading retrieval cue, while its unmarked active counterpart is modeled as a *null* feature that neither helps nor hinders the retrieval of the antecedent, thereby making [P → A] mismatches easier to process and thus more acceptable than [A → P] ones. As such, both RH and CAM invoke memory differences in the processing of active and passive clauses to explain the mismatch asymmetry, albeit in different ways.

The present study We conducted two acceptability judgment experiments ($N=30$) to evaluate such memory-based accounts of the mismatch asymmetry. Unlike previous studies, we employed cataphora to manipulate the order of the antecedent and ellipsis clauses and thus which clause is subject to memory constraints. To reconcile methodological discrepancies across previous studies [1,7,10,11], Experiment 1 aimed at replicating the basic finding using non-cataphoric stimuli like (1). Experiment 2 then considered cataphoric variants as in (2). In both experiments the 24 experimental items were interspersed with the same 48 acceptable and unacceptable filler items, which are exemplified in (3). Their mean ratings are indicated by the dashed lines in Fig. 1.

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| (2) a. | Before the lawyer did, the report was first read by the judge. | Mismatch: [A ← P] |
| b. | Before the confession was, the judge read the report first. | Mismatch: [P ← A] |
| c. | Before the lawyer did, the judge read the report first. | Match: [A ← A] |
| d. | Before the confession was, the report was first read by the judge. | Match: [P ← P] |
| (3) a. | The thief was arrested and his brother was as well. | Acceptable filler |
| b. | A proof that God exists doesn't. | Unacceptable filler |

Predictions If the mismatch asymmetry (i.e., $[P \rightarrow A]$ being more acceptable than $[A \rightarrow P]$) is due to memory-related differences between active and passive clauses, we should see the opposite pattern under cataphora, in which the order of clauses is reversed. For example, the RH would predict that $[P \leftarrow A]$ mismatches, where the passive clause is subject to memory constraints, should yield a greater “illusion of grammaticality” and be more acceptable than $[A \leftarrow P]$ mismatches. If, on the other hand, memory constraints do not play a role, we should see cataphoric and non-cataphoric mismatches exhibit the same pattern, regardless of the order of the clauses.

Results and Discussion Both experiments revealed two main effects and no interaction between them (cf. Fig. 1): mismatches were degraded compared to matches, and passive VPE was degraded compared to active VPE (both significant at $p \leq 0.001$). While these results replicate [1,7,11]’s original finding that $[P \rightarrow A]$ mismatches are more acceptable than $[A \rightarrow P]$ ones (left panel), they are inconsistent with memory-based explanations since the same asymmetry prevailed under cataphora (right panel): $[A \leftarrow P]$ mismatches were more acceptable than $[P \leftarrow A]$ ones. Furthermore, our results indicate that the mismatch asymmetry is driven by a mismatch-independent penalty for passive VPE: even in the absence of a mismatch, passive ellipses were less acceptable than active ones.

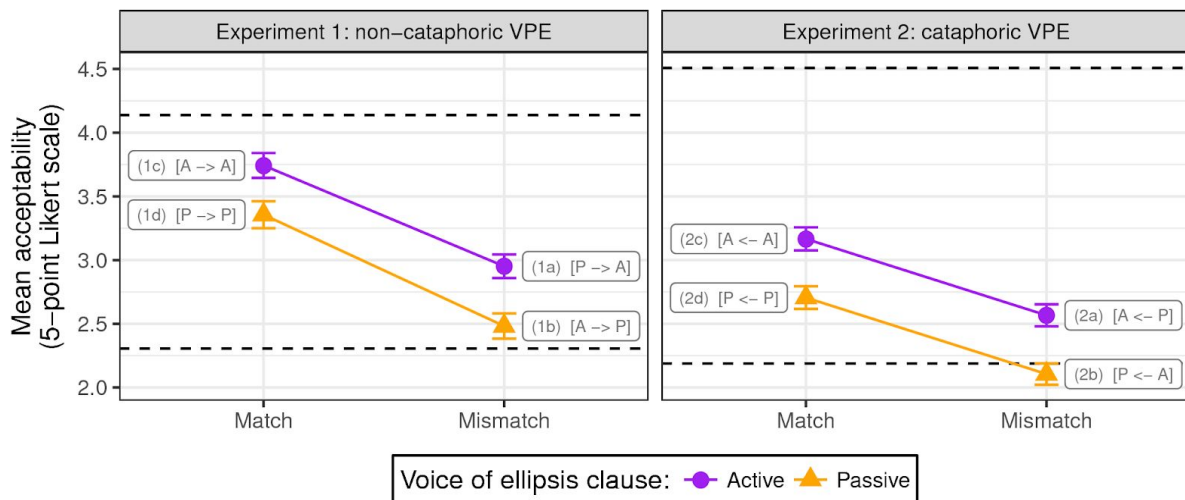


Figure 1. Results from Experiment 1 (left) and 2 (right). Dashed lines show mean ratings of (un)acceptable fillers exemplified in (3).

Conclusions and future directions Our results indicate that the mismatch asymmetry is not due to memory constraints, but rather reflects an interplay of two independent factors: a penalty for voice mismatch, and a penalty for passive-voice ellipsis clauses. While the mismatch effect is consistent with a wide range of theories of VPE including both syntactic identity and referential accounts, these theories do not capture the across-the-board penalty for passive VPE. It is not yet clear, however, whether this effect is even ellipsis-specific, and hence whether theories of VPE should be held accountable for it. In an ongoing study that utilizes non-elliptical variants of (1)/(2), we are investigating the hypothesis that the passive penalty results from information-structural constraints by which passive clauses impose greater demands on the discourse context than active clauses in the types of passages under consideration -- constraints that would thus be independent from, but perhaps exacerbated under, VPE.

- [1] Arregui et al. (2006) [2] Frazier (2013) [3] Kehler (2000) [4] Kertz (2013) [5] Mehler (1963) [6] Merchant (2013) [7] Parker (2017) [8] Martin & McElree (2008) [9] Lewis & Vasishth (2005) [10] Kim et al. (2011) [11] Kim & Runner (in press)