

The effect of experimentally proffered alternatives on the presupposition of *only*

Maho Takahashi (UCSD), David Barner (UCSD), and Aaron Cousins (Cardiff)
mtakahas@ucsd.edu

The presuppositional component of the focus element *only* has been argued to be equivalent to the propositional content of its prejacent, which is essentially a sentence without *only* (e.g., “Only Paul speaks French” presupposes that “Paul speaks French”) [1]. Some studies [2, 3], however, have suggested that the presupposition of a sentence with *only* is not always as straightforward as its prejacent. They instead propose that *only* denotes a set of alternative worlds, and depending on how they are organized (based on cardinality, value, etc.), a world in which the prejacent is omitted can be true.

We tested this hypothesis, and probed whether the omission of the prejacent reported in previous studies might be due to the way in which alternatives were presented to participants. Specifically, we hypothesized that the parser fails to compute presuppositions when they experience uncertainty regarding the speaker’s intended question under discussion (QUD), which may be impacted by the cost of processing negated statements (including scope ambiguity) [4], and by alternatives that are proffered in the preceding discourse. In the past experiments, negated test sentences (e.g., “Who didn’t drink only orange juice?”) were presented without an affirmative context, a factor known to impact comprehension in other circumstances [5, 6, 7]. Also, participants were asked to interpret sentences by selecting from a pre-constructed set of alternatives, potentially elevating the prominence of interpretations (and QUDs) that participants would not spontaneously consider otherwise (Fig.1). Hence, we attempted to compare the pattern of results from the previous studies with our modified paradigms that circumvent the proffering of prejacent-omitting alternatives (Exp.1), and out-of-context negations in a test sentence (Exp.2).

Experiment 1: 108 native speakers of English participated in an online study, which manipulated RESPONSE TYPE (fixed vs. free). All participants were presented with sentences with *only* under negation (e.g., “One person didn’t drink only orange juice. What could they have drunk?”). In the fixed-response group, pre-constructed prejacent-preserving and prejacent-omitting responses were explicitly listed as in past work. In the free-response group, participants spontaneously generated responses by dragging elements into a response box (Fig.2). Participants saw 4 trials with *only*, together with 8 fillers. Each of the 3 lists was fully counterbalanced and pseudorandomized.

Results/Discussion: A generalized linear model revealed a significant main effect of RESPONSE TYPE ($p = 0.004$) (Fig.3), indicating that participants were more likely to compute presuppositions when they spontaneously generated their responses relative to when prejacent-omitting alternatives were explicitly proffered by the experimenter.

Experiment 2: A new group of 108 speakers participated in an online experiment identical to Experiment 1 except for the inclusion of an affirmative sentence preceding the test sentence (e.g., “Two people drank orange juice, but one person didn’t drink only orange juice”). This allowed a replication of Exp.1, and enabled us to test the idea that adding a preceding affirmative statement promotes comprehension of a negative one.

Results/Discussion: A generalized linear model revealed a significant main effect of response type ($p < 0.001$), replicating Exp.1. However, there was no main effect of AFFIRMATIVE STATEMENT ($p = 0.054$) or interaction between RESPONSE TYPE and AFFIRMATIVE STATEMENT ($p = 0.42$), suggesting that the presentation of negated statements without prior context does not appear to be a major factor in the elicitation of *only*’s presupposition.

Conclusions: These findings indicate that, when participants are allowed to construct spontaneous interpretations of utterances, they are highly likely to presuppose the prejacent in the scope of *only*. This suggests that previous reports may have found lower rates of presupposition because they proffered alternative interpretations of utterances that otherwise would not be spontaneously considered by listeners. Based on these findings, we suggest that the conclusion drawn from the previous studies, namely that *only* denotes a set of alternatives not limited to the prejacent of a sentence, may be premature.

Added in Exp.2

Introduction and question

Three people were in a cafeteria that serves orange juice, tea, and coffee. (Two of the people drank orange juice, but) one person didn't drink only orange juice. What could they have drunk?

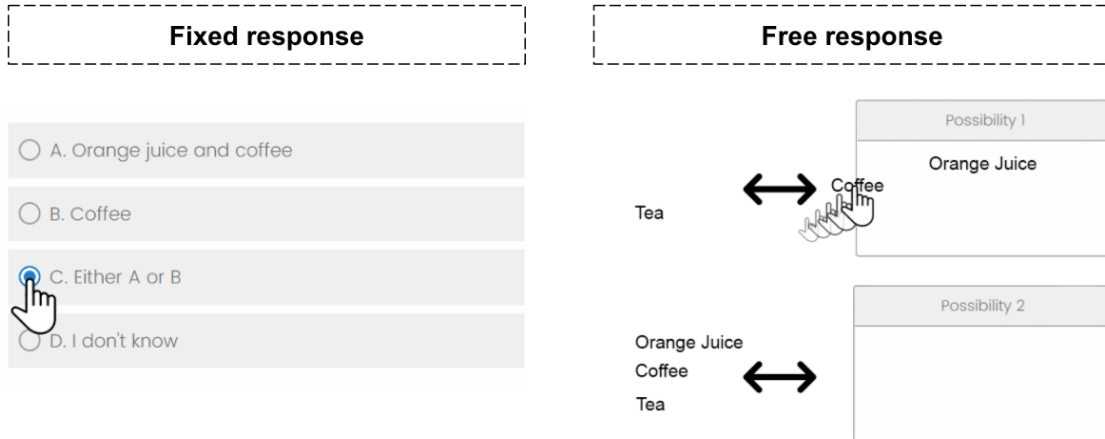


Figure 2: Overview of experimental design.

Only
Three people were in the cafeteria
A drank orange juice and nothing else
B drank coffee and nothing else
C drank orange juice and coffee
Who didn't drink only orange juice?
<input type="checkbox"/> C
<input type="checkbox"/> C and B
<input type="checkbox"/> I don't know

Figure 1: Original paradigm (in Jayez & van Tiel 2011).

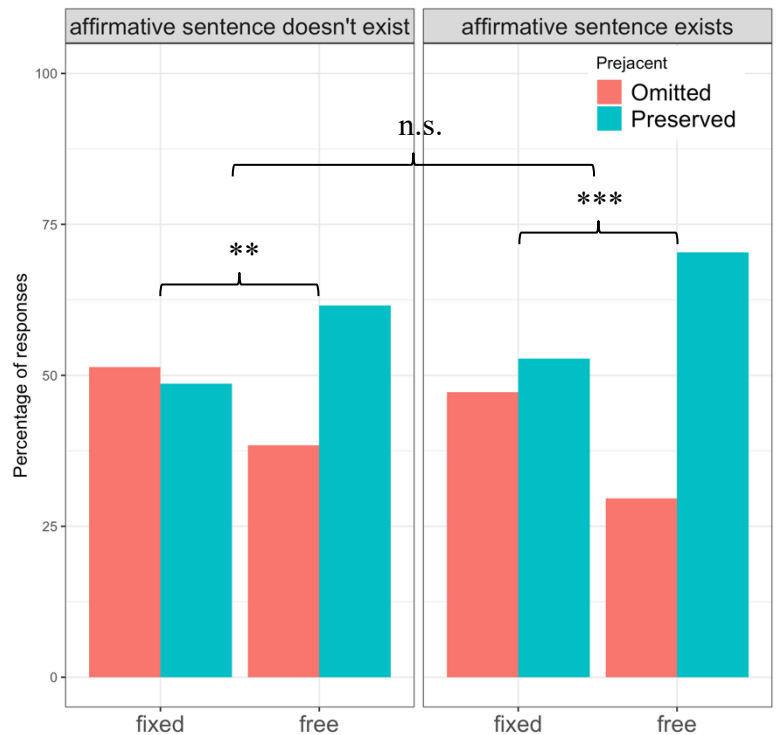


Figure 3: Proportion of responses from Exp.1 and 2.

References: [1] Horn (1969). A Presuppositional Analysis of *only* and *even*. *Proceedings from the Annual Meeting of the Chicago Linguistic Society*. [2] Beaver & Clark (2008). *Sense and Sensitivity*. [3] Jayez & van Tiel (2011). Only Only? An Experimental Window on Exclusiveness? *Proceedings of the 18th Amsterdam Colloquium on Logic, Language and Meaning*. [4] Prado & Noveck (2007). Overcoming perceptual features in logical reasoning: A parametric functional magnetic resonance imaging study. *Journal of Cognitive Neuroscience*. [5] Musolino & Gualmini (2004). The role of partitivity in child language. *Language Acquisition*. [6] Musolino & Lidz (2003). The scope of isomorphism: Turning adults into children. *Language Acquisition*.