

**Focus alternatives and contextual domain restriction:
A visual world eye-tracking study on the interpretation of “only”**

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The interpretation of sentences with focus-sensitive elements like *only* depends on context to restrict the domain of relevant alternatives for evaluating the focused expression [1]. But what kinds of contextually available information do listeners actually use to restrict interpretive domains? Two visual world eye-tracking experiments [2] show that listeners use both preceding linguistic context (Experiment 1) and real-world knowledge about specific scenarios (Experiment 2). Participants heard sequences of an introductory sentence (1) followed by a target sentence (2), then had to click on the item mentioned in the final sentence (corresponding to the element that associates with “only” in (2b)) in a 4-item display (6a). If the set of previously mentioned items is used to restrict the set of focus alternatives in a subsequent sentence containing “only”, listeners should be able to better predict the upcoming focused element, and uniquely identify the corresponding scene referent earlier than in cases where there is no overlap between the items mentioned in the two sentences—this prediction is tested in Experiment 1. Similarly, contextual information about specific real-world scenarios could aid listeners by restricting subsequent referential domains to context-appropriate items; Experiment 2 asks whether providing rich contextual information helps listeners identify the target referent early, and whether such an effect is independent of or parasitic on effects of linguistic mention.

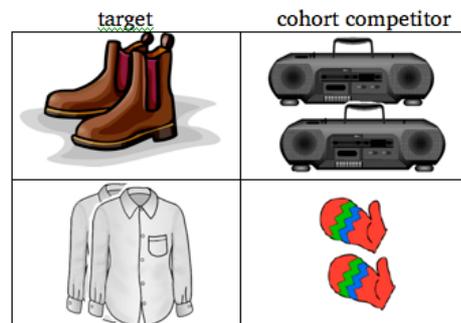
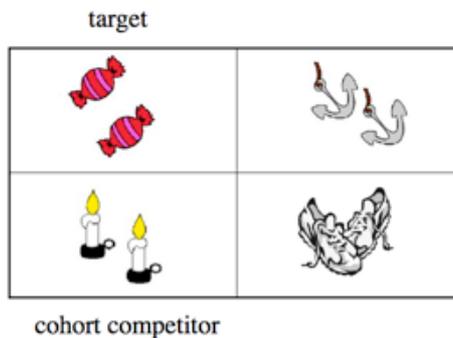
Experiment 1 compared pairs of sentences like (1b) and (2b), where the focused item is included in the set of things mentioned in (1b) (Mention condition), with pairs like (1a) and (2b), where a discourse-new item is focused (No Mention). Mention was crossed with presence (2b) or absence (2a) of “only”. First, there was a main effect of Mention, such that the target referent was identified earlier when it had been mentioned. On No Mention trials, “only” disambiguated the intended referent from a phonological cohort competitor after the entire word (600 ms after direct object onset). But in the presence of “only”, fixations converge on the target item 200 ms after target word onset—well before the input disambiguates the target and the competitor. At 200-400 ms, there are more looks to the target in Mention-Only than Mention-No Only trials ($t=10.4$, $p<.001$), while No Mention trials did not differ ($t=.9$, $p=.35$). Thus, after hearing only the initial sound of the target word, listeners have a strong expectation that the set of possible referents will be constrained by the set mentioned in the previous sentence.

Experiment 2 embedded the four conditions from Experiment 1 under a Context manipulation (cf. [3], [4] for other context-induced interpretive biases in eye-tracking). Participants heard an initial context sentence that provided them with information about the upcoming narrative that was more (3) or less (4) restrictive. This was followed by a sentence about one of the characters in the narrative, then a third sentence about the other character (5). As in Experiment 1, Mention was crossed with presence or absence of “only”. The Wide Context conditions replicated the results of Experiment 1: listeners were earlier overall to identify the target referent (“boots” in (5)/(6b)) when it was mentioned in the previous sentence (264 ms after target word onset) than when it wasn’t mentioned (376 ms), and even earlier in the presence of “only” (186 ms). This pattern of results is strengthened in the Narrow Context conditions: listeners disambiguated in favor of the target referent earlier for the Mention conditions (352 ms after target onset) compared to No Mention (480 ms), and earliest in presence of “only” (104 ms after target onset—given the ~200 ms it takes to program and launch an eye movement, this suggests participants had identified and launched eye movements toward the target before the onset of the target word). These results show that additional contextual information about specific scenarios can strengthen the Mention-Only interaction observed in Experiment 1.

Together, the results of Experiments 1 and 2 suggest that lexical items like “only” provide listeners with the strong cue that the alternatives set will be restricted by the set of mentioned

items. In addition, information about the discourse context can further aid listeners by further restricting this set.

- (1) Mention:
 a. No mention: Mark has some toothpicks and some pencils.
 b. Mention: Mark has some candy and some pencils.
- (2) *Only*:
 a. No *only*: Jane has some candy.
 b. *Only*: Jane only has some candy.
- (3) Narrow Context: Jill and Peter are at the shoe store.
 No mention: Jill wants to buy some sneakers and some sandals.
 Mention: Jill wants to buy some boots and some sandals.
- (4) Wide Context: Jill and Peter are at the mall.
 No mention: Jill wants to buy some dresses and some coats.
 Mention: Jill wants to buy some boots and some coats.
- (5) *Only*:
 a. No *only*: Peter wants to buy some boots.
 b. *Only*: Peter only wants to buy some boots.
- (6) a. Experiment 1 example display: b. Experiment 2 example display:



References

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