Introduction

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]. For instance, in the following pair of sentences, the speaker can be construed as meaning she only owns a bike of the set of things relevant to the current situation (excluding the implausible reading that a bike is the only thing in the universe that she owns).

Jill has a car and a bike, plus she lives near a bus line. I only have a bike.

But what kinds of contextually available information do listeners actually use to restrict interpretive domains? Two visual world eyetracking experiments show that listeners use both preceding linguistic context (Experiment 1) and implicit conceptual knowledge (Experiment 2).

Experiment 1

Do comprehenders interpret ‘only’ with respect to the items mentioned in the preceding linguistic context?

On each trial, participants heard a context sentence mentioning two items, followed by a target sentence mentioning one item; the target item was either discourse-new, or overlapped with a previously mentioned item. The movements were tracked as they listened to the sentence and performed eye-tracking.

Context sentence: Mark has some candy and some pencils
Target sentence: Mention-NoOnly: Jane has some candy. Mention-Only: Jane only has some candy. NoMention-NoOnly: Jane has some anchors. NoMention-Only: Jane only has some anchors.

A four-picture display appeared concurrently with the target sentence. Participants were instructed to click on the items Jane had, and their eye movements were tracked as they listened to the sentence and performed the task.

In experimental trials, two of the four pictures were members of the same phonological cohort (here, candy and canaries). In the absence of any biasing cues, phonological overlap leads to late disambiguation between target and competitor. Early disambiguation in favor of the target indicates the presence of some additional cue.

Predictions for Experiment 1:
- Late looks to target item--no bias due to Mention or Only
- Early looks to target item--bias toward target due to Mention and/or Only

Experiment 1 results

There is a main effect of Mention (F(1,21)=15.2, p<0.001) 200-500 ms post target word onset (vertical line), which is strengthened by the presence of only (Mention x Only interaction, F(1,21)=4.0, p<0.05).

In the No Only conditions, looks to the target item relative to the cohort competitor rise earlier (375 ms) in the Mention condition compared to the No Mention condition (450 ms).

When the target sentence contained Only, the advantage for the target item due to Mention increases: looks to the target start increasing relative to the competitor even earlier (200 ms) in the Mention condition compared to the No Mention condition (600 ms).

Experiment 2

Experiment 1 showed that listeners tend to interpret only with respect to recently mentioned items—that is, they use the discourse context to restrict their interpretive options. Experiment 2 replaces the Mention factor from Experiment 1 with a Context Type manipulation, to ask whether providing a biasing context (here, ‘bakesale’) will have a similar restricting effect on the interpretation of only.

Context sentence:
Baking: Bill is at the grocery store. He has to buy some things for the bakesale.
Unbaking: Bill is getting some things at the grocery store.
Target sentence: NoOnly: He’s getting some chocolate cake.
Only: He’s only getting some chocolate cake.

Experiment 2 results

Context effect: In Biasing Context conditions, looks to context-appropriate items rise relative to looks to distractors earlier with Only compared to No Only, 700-600 ms pre target word onset (t=2.1, p<0.05). As in Experiment 1, only prefers to be interpreted with respect to preceding linguistic material.

Conclusions

- In Experiment 1, mentioned items restricted the alternatives of a subsequent focused element in the scope of only.
- Experiment 2 finds a similar preference for only to be interpreted with respect to the preceding discourse—when biasing contextual information is provided in the context of only, listeners look at context-relevant items earlier than in sentences without only.
- It is not yet clear if experiments from a different domain, such as the experiments involving chocolate cakes and chocolate ice cream, show the same effect.

References