

Restricting and generating hypotheses about focus alternatives

Interpreting sentences with focus-sensitive elements like *only* depends on context to restrict the domain of alternatives for evaluating the focused expression [1]. But what information do listeners use to restrict interpretive domains? In three visual world eye-tracking experiments [2], we examine potential factors. In all three, an initial sentence provided context for the test sentence(s), which identified a target from a 4-item display (3) for participants to click on. We manipulate:

1. Whether the target was mentioned in the initial sentence (Mention/No mention)
2. Whether “only” appeared in the target sentence (Only/No only)
3. How specific the initial sentence was about the setting (Informative/Underinformative)
4. Whether the target item was conceptually similar or dissimilar to mentioned items (Same/Different category)

If any of these factors contribute to restricting focus alternatives in subsequent sentences, listeners should be faster to predict the upcoming focused element and identify the corresponding scene referent.

Experiment 1 compared sentence pairs like (1b) and (2) (Mention) with pairs like (1a) and (2) (No Mention). In Mention conditions the target referent was identified earlier. Further, a Mention-Only interaction was apparent at 200-400 ms, with more target fixations in Only vs. No Only trials, for Mention ($p < .001$) but not No Mention ($p = .35$). Listeners’ preference for the target in Mention-Only trials preceded lexical disambiguation—after hearing just the initial sound of the target word, looks strongly favored the mentioned items. Experiment 2 added an introductory sentence that was more (4) or less (5) informative about the upcoming narrative to the paradigm of Experiment 1. Underinformative Context conditions replicated Experiment 1 results, with mentioned targets (6) identified earlier ($p < .01$), and Mention-Only conditions earliest. Informative contexts showed a similar pattern, but with disambiguation even earlier. Experiment 3 investigated effects of conceptual similarity. Participants heard sentences like (7a), continued with sentences containing mentioned (7b), unmentioned same-category (7c), or unmentioned different-category (7d) items. Mention again facilitated target identification ($p = .01$). Additionally, same-category targets were disambiguated earlier than different-category targets ($p < .05$), revealing listeners have a stronger expectation for conceptually related items to be focused.

How do these findings generalize to other alternative-sensitive particles? We extend our investigation to *also*, which differs from *only* in how the focused element relates to the focus alternatives. While *only* contributes the claim that *no* alternative to the focused constituent makes the sentence true, its counterpart *also* presupposes the existence of some such alternative. A preference for mentioned items will play out differently in each case: when the *also* sentence (8b) follows (7a), the expectation is that a superset of the items just mentioned make the sentence true, contrasting with the subset expected for the *only* sentence (8a). We found that with *also*, looks to the superset (9) exceeded looks to all other quadrants as early as the 200 ms window starting 100 ms before target word onset ($p < .0005$). For *only*, looks converged on the subset quadrant, consistent with Experiments 1-2. Thus while both *only* and *also* are sensitive to recent mention, listeners’ expectations about how the focused element will relate to the alternatives will depend on the particular lexical item.

The joint results of Experiments 1-2 show that listeners use mention as a strong cue for restricting alternatives when interpreting *only*; information about the context can aid in further restricting the set. Experiment 3 suggests that listeners consider potential upcoming focus alternatives while still engaged in interpreting and integrating preceding content. Future work will build on Experiment 4 to pull apart the meaning contributions of specific lexical items from how alternative-sensitive meanings generally arise from interaction with context.

Examples

- (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) Experiment 1 example display:
CANDY (target); CANDLES (competitor); ANCHORS, SNEAKERS (distractors)
- (4) a. Informative Context: Jill and Peter are at the shoe store.
 - b. No mention: Jill wants to buy some sneakers and some sandals.
 - c. Mention: Jill wants to buy some boots and some sandals.
 - d. *Only/No only*: Peter (only) wants to buy some boots.
- (5) a. Underinformative Context: Jill and Peter are at the mall.
 - b. No mention: Jill wants to buy some dresses and some coats.
 - c. Mention: Jill wants to buy some boots and some coats.
 - d. *Only/No only*: Peter (only) wants to buy some boots.
- (6) Experiment 2 example display:
BOOTS (target); BOOMBOXES (competitor); SHIRTS, MITTENS (distractors)
- (7) a. Mark has some apples and some oranges.
 - b. Mention: Jane only has some apples.
 - c. NoMention-SameCategory: Jane only has some pears.
 - d. NoMention-DifferentCategory: Jane only has some sneakers.
- (8) a. *Only*: Jane only has some apples.
 - b. *Also*: Jane also has some pears.
- (9) Experiment 4 example display:
APPLES (subset of mentioned); PEARS (unmentioned);
APPLES+ORANGES (mentioned set); APPLES+ORANGES+PEARS (superset of mentioned)

References:

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