

When speakers keep their focus – alternative inhibition in language production

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Background:

Linguistic focus (evoked by, e.g., contrastive intonation) activates **alternatives** to the focused element in a **listener's** mind. These alternatives are more readily available, for example in a lexical decision task (e.g., Braun & Tagliapietra, 2010; Husband & Ferreira, 2016).

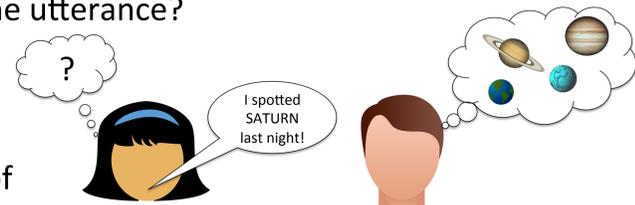
Research Question:

Are **alternatives** activated in the mind of a **speaker**, when she decides to focus a referent in the utterance?

Hypotheses:

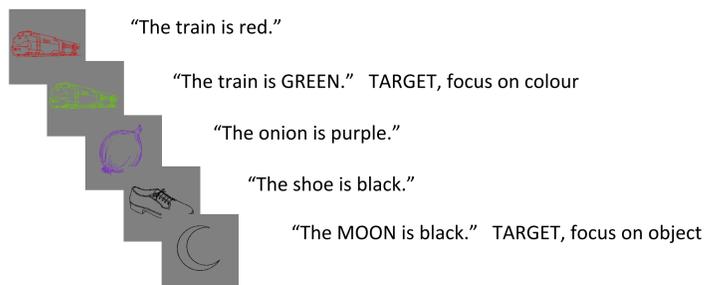
NO, the speaker knows what she wants to say and can selectively access the item in her mental lexicon (but see the extensive literature on semantic interference).

YES, the speaker uses focus to indicate the importance of alternatives for the interpretation of an utterance (cf. Krifka, 2008) and thus, alternatives are relevant during language production.



Methods and Design:

Evoking focus in language production



Participants name coloured pictures. Targets are preceded by a picture that differs in one dimension (object or colour). The new dimension is contrastive and should therefore be focused.

Design

Factor **CONDITION** with levels: **OBJECT FOCUS** (probe word is a focus alternative), **COLOUR FOCUS** (probe word is not a focus alternative).
Dependent variable: RT for lexical decision on probe word.

Probing alternative activation

Lexical decision with cross-modal priming:

On about 62% of the trials, a letter string appears on the picture (well before speech onset). Participants decide whether the letter string is a word and only then continue naming the picture.

NAMING-ONLY TRIAL:



"The train is GREEN."

LEXICAL DECISION TRIAL (WORD):



200ms 500ms until response, max. 5000ms



"The onion is YELLOW."

Predictions

If the speaker does not activate alternatives during speech planning: $RT_{\text{OBJECT FOCUS}} = RT_{\text{COLOUR FOCUS}}$

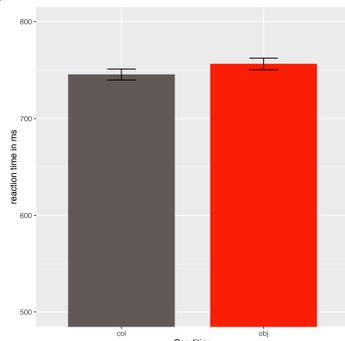
If the speaker activates alternatives, making them more easily available for lexical decision: $RT_{\text{OBJECT FOCUS}} < RT_{\text{COLOUR FOCUS}}$

Experiment 1: Language production

Methods: 27 native speakers of German (22 female; mean age 24.85). 100 critical items (50 object focus, 50 colour focus), 200 fillers.

Results: Faster reaction times in the **COLOUR FOCUS** condition, $t = 2.75, p < .01$.

Discussion: There is a processing difference for alternatives. However, other than predicted, the alternatives are not more easily available. -> Difference between comprehension and production?

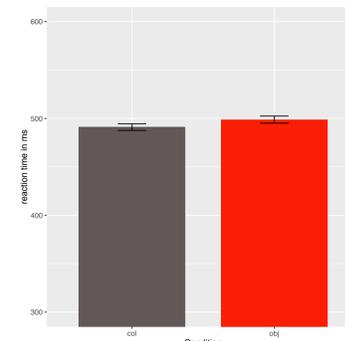


Experiment 3: Language comprehension without pictures

Methods: 17 native speakers of German (11 female; mean age 25.41). Same procedure as Exp. 2, but pictures and catch trials were removed.

Results: No difference, $t = 1.13, p > .1$.

Discussion: Inhibition disappears but there is also no sign of facilitation. There is still the linguistic context: subsequent trials have adequate focus intonation. -> Facilitation only in cases without any contextual information?

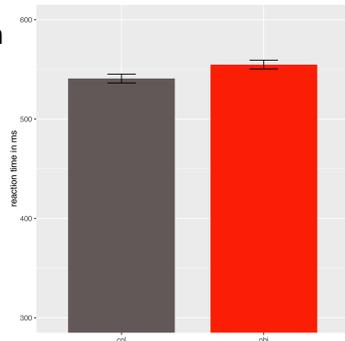


Experiment 2: Language comprehension

Methods: 17 native speakers of German (12 female; mean age 24.29). Pictures were presented with recordings (e.g., "The onion is yellow"). Directly after the recording, the probe word appeared. When the description did not match the picture (10% catch trials), participants had to press an additional button.

Results: Faster reaction times in the **COLOUR FOCUS** condition, $t = 3.22, p < .01$.

Discussion: Again, there is (unexpected) inhibition for focus alternatives. In contrast to previous comprehension studies, linguistic (order of sentences) and visual context was provided and interpretation was required (does picture fit description?). -> Inhibition if interpretation is required?



Conclusions:

1. Focus alternatives are processed differently from non-alternatives in language production (otherwise, there would have been a null-effect).

2. The differential effect is inhibitory, that is, alternatives are not more easily available. Rather, they seem to be suppressed.



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References:

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