Mechanisms of LF priming: Data from Kannada and English

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What is the nature of priming?

Speeded access to or heightened representation?

Scope Ambiguity: A sentence with a quantifier and negation, like Every horse didn’t jump over the fence has two interpretations, determined by the scope of the quantifier:

1. Isomorphic: every > not All of the horses failed to jump (none did)
2. Non-Isomorphic: not > every Not all of the horses jumped (some did)

Children adhere to the surface scope interpretation of (3), while adults prefer inverse scope interpretations, with a TVJT [1]

(3) Every horse didn’t jump over the fence

Isomorphic: FALSE, because 2 did
Non-Isomorphic: True, one didn’t make it

However, children’s access to the inverse scope interpretation can be improved through priming with not every sentences, as in (4) [5]

(4) Not every horse jumped over the fence

Design: 3 not every trials 3 every not trials

“not every” sentences prime children to access the inverse scope interpretation.

Because “not every”: sentences are of a different form, this suggests that

Priming is the boosting of a representation

Research Goals

There are further questions about how it is that representations are boosted.

• Is priming symmetric or asymmetric?

• If asymmetric, how is which representations get primed decided?

• Do we see differences in children and adults with respect to priming?

Recall, with scope ambiguity, like (3), adults prefer inverse scope, while children prefer surface scope. Which interpretations, then, can be primed?

IVT

Task is to determine truth of utterance (5) as soon as possible. Stimuli are hidden under cups; revealed one at a time.

(5) Every dog’s tail is white

Isomorphic: all dog’s tails are white
Non-Isomorphic: at least one dog’s tail is not white

If both interpretations are available, non-isomorphic verifiable first

This task has been shown to make adults isomorphic.

Therefore, is a good test case for priming

Kannada: Constructions and TVJT

(6) is ambiguous

(6) avanu eraDu seebu ore-y-al-illa
he two apple peel-inf-neg
‘He didn’t peel two apples’

n = 40
4:1:4:9 m = 4.4

Children prefer the surface scope interpretation, even when the inverse scope is true

Priming in Kannada

(7), the split partitive construction, biases the inverse scope interpretation

(7) avanu े seebu-gal-a-ll eradu ore-y-al-illa
he prox apple-pl-loc two peel-inf-neg
‘He didn’t peel two from these apples.’

n = 20: 4:1:4:9 m (n = 4.5)
3 unmarked, 3 partitive
Order counterbalanced

Priming is Asymmetric, only inverse scope primed

Priming in English-speaking Adults

Given that the IVT induces surface scope interpretations, is this primable?

20 adults
6 IVT trials, 3 TVJT trials
Order counterbalanced

Surface scope interpretation is primed, not inverse scope

Priming is Asymmetric, only Surface scope primed

Source of the Asymmetry?

Our experiments show that priming is asymmetric, with only the ‘dispreferred interpretation’ being primed

Global: Preferences are stored on the representations
• Predicts: only surface scope can be primed in adults

Local: Preferences are relative to a context
• Predicts inverse scope can be primed in a task with a surface scope preference

Priming of inverse scope in the IVT

18 adults
3 not every trials (4) followed by
3 every not trials (6)

Inverse scope interpretation can be primed in IVT

Discussion

If preferences are globally stored, this predicts adults can only be primed with surface scope interpretations.

We find that adults can be primed with the inverse scope interpretation in a task where the preference is surface scope.

This suggests that preferences are calculated with respect to a context, and does not require weights to be stored on grammatical representations.

References


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Conclusions

• Previous evidence reveals that priming results from an elevated status of a representation, not of a process
• Priming is asymmetrical, with only dispreferred interpretations being primed
• Asymmetry between children and adults in what can be primed is a result of differing preferences
• We find that preferences cannot be global, and suggest that preferences are calculated locally
• Suggests no differences in priming mechanism between children and adults, but differences in preferences

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