

# 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

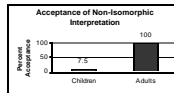
1. Isomorphic every > not All of the horses failed to jump (none did)
2. Non-Isomorphic not > every Not all of the horses jumped (some did)

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*

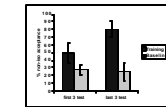
- Isomorphic: FALSE, because 2 did
- Non-Iso: True, one didn't make it



However, children's access to the inverse scope interpretation can be improved through priming with *not > every* sentences, as in (4) [3]

(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

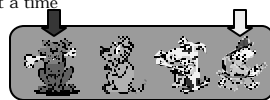
- Is priming symmetric or asymmetric?
- If asymmetric, how is which representations get primed decided?
  - Are weights calculated locally (in a context) or globally (on the representation)?
- Do we see differences in children and adults with respect to priming?

*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

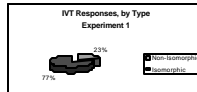
(5) *Every dog doesn't have a hat*

- Isomorphic: none have a hat
- Non-Iso: not all have a hat



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 orey-al-illa*  
he two apple peel-inf-neg  
'He didn't peel two apples'

### Surface Scope- True



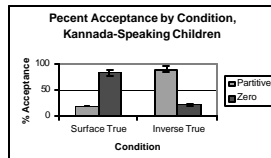
Not the case 2 were peeled

### Inverse Scope- True



there are 2 unpeeled 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

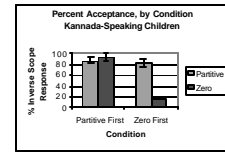
(7) *avanu ii seebu-gaL-alli eradu orey-al-illa*  
he prox apple-pl-loc two peel-inf-neg  
'He didn't peel two from these apples.'

n = 20: 4;1-4;9 (m = 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?

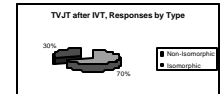
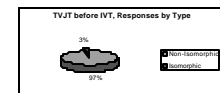
20 adults

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

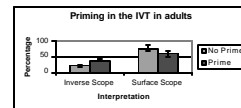
## Priming of inverse scope in the IVT

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

- [1] Musolino, Crain and Thornton (2000) *Navigating Negative Quantificational Space* [2] Musolino and Lidz (2002) 26th BUCLD Proceedings [3] Viau, Lidz & Musolino (2006) Presentation at BUCLD [4] Crain & Thornton (1998) *Investigations into Universal Grammar* [5] Conroy and Lidz (2007) *A return to Isomorphism: the processing demands associated with Resolving Ambiguity*. CUNY.

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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

