Older children marginally more likely to select unambiguous

The elephant blows on the monkey with the fan.

Adults' interpretation of PP
Children have access to both interpretations [6], but need to
All groups (including adults) interpret the verb in the unambiguous way in at least 50% of trials.

Comprehension Priming
• Adults' interpretation of PP-attachment ambiguities can be primed by comprehension & production [1]
• 3- to 6-year-olds can be primed (e.g., [2-4]), but research has focused on structural alternatives with similar meanings – active vs. passive; dative alternation
• Production-priming is robust [2,3], but comprehension-priming is more fragile, cf. [4]

Main Questions: Can 4- to 6-year-olds be primed toward a particular interpretation of a globally ambiguous sentence? Is the strength of this priming affected by whether or not the prime sentence itself is ambiguous?

Globally Ambiguous Sentences / PP Attachment Ambiguity
(1) The elephant blows on the monkey with the fan.

Comprehension Priming
VP Attachment / Instrument: The elephant uses the fan to blow on the monkey.
NP Attachment / Modifier: The elephant blows on a monkey that is holding a fan.

• Adults' interpretation of PP-attachment ambiguities can be primed by comprehension & production [1]
• 3- to 6-year-olds can be primed (e.g., [2-4]), but research has focused on structural alternatives with similar meanings – active vs. passive; dative alternation
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Main Questions: Can 4- to 6-year-olds be primed toward a particular interpretation of a globally ambiguous sentence? Is the strength of this priming affected by whether or not the prime sentence itself is ambiguous?

Goal of the Study: Investigate whether children's interpretation of sentences with PP-attachment ambiguities can be primed by producing sentences with an unambiguous meaning.

Overall Results
• Overall preference for the instrument interpretation (baseline = 86.4%)
• Both modifier interpretation groups select the instrument interpretation less often (p = 0.07, Z = 3.25, p < 0.001)
• Older children marginally more likely to select the instrument interpretation (p = 0.09, Z = 1.90, p = 0.058)
• All groups significantly different from baseline except the instrument interpretation group with unambiguous primes

Picture Selection Task
Prime Trial: The elephant blows on the monkey with the fan.
Target Trial: The cow blows on the horse with the straw.

Part 1: Priming Study
Participants: 51 children, mean age = 5.7, range 4.5 – 6.7
Prime Sentences (between subjects, n = 8)
• Ambiguous: “The elephant blows on the monkey with the fan.”
• Unambiguous – Instrument: “The elephant blows on the monkey by using the fan.”
• Unambiguous – Modifier: “The elephant blows on the monkey that has the fan.”

Equi-Biased Verbs (from [5]) scratch / throw / pinch / feel / drag / turn over / blow / point at

Interpretation Groups (between subjects)
Instrument: [VP blows on [the monkey][with the fan]]
Modifier: [NP blows on [the monkey with the fan]]

Part 2: Control Study
• Children have access to both interpretations [6], but need to establish a baseline preference

Participants: 13 children, mean age = 5.3, range 4.1 – 5.11
Target Sentences (n = 8) Ambiguous target trials from Part 1 without the preceding prime sentence

Filler Sentences (n = 16) Sentences with a different structure & verbs than the targets (e.g., The frog and the rabbit eat the bread)

Discourse & Conclusion
Main Findings: Comprehension-priming is possible when the structure of the prime is globally ambiguous. Priming occurs in both directions when the prime is ambiguous, but only modifier interpretations are primed when the prime is unambiguous.

Baseline Preferences: Children have consistently higher rates of instrument preferences compared to adults in [3]

Individual Verbs: Exploratory analyses, but overall effects may be driven by 2 verbs (throw / drag)

Future Directions:
• Children solely rely on verb bias to interpret PP-attachment ambiguities [5] → can they be primed against these biases?
• e.g., priming modifier interpretations for instrument-biased verbs

References:

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