Separate contributions of words and pictures in an infant priming task for one-year-olds

What’s in a Prime?

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Are words connected in the infant lexicon?
An infant version of adult priming methodology has been developed. 18m & 24m infants look more at named pictures if they have heard a related prime very shortly before the image name.

What is infant ‘priming’?

word-word priming? cat! dog!
word-picture priming? cat! dog!

(lexical facilitation) (additive near-match)

Is greater interest in the named target caused by lexical facilitation of the target word, or by additive interest in the target from the prime?

Subjects
48 x 18-month-olds
56 x 21-month-olds
(Ranges: 17.5-18.5, 20.5-21.5)

Procedure
12 x paired presentations
• Word-pair precedes images
• No repetition of words
• Only known words analysed

Coding
Offline, blind, frame-by-frame
40ms temporal resolution

-2200ms -400ms -200ms 0 2500ms
I saw a cat! Dog! image presentation

Related word-pair
... cat!
Dog!

Unrelated word-pair
... plate!
Dog!

1 prime-target
2 prime-look
3 neutral-target
4 neutral-look

18m:

21m:

Measures
PTL: Proportion of target looking T/T+D. Chance = 0.5
LLK. Difference in single longest look to each image i-d (ms). Chance = 0 ms

Summary
18 Months
No Priming effect or interaction
Target Name drives target preference
No target looking in Prime-Look condition

21 Months
Prime x Target Interaction
Target looking only for Prime-Target
Inhibition when prime unrelated

Trajectory
Inhibition develops between 18 and 21 months of age

Conclusions
Infants are sensitive to relationships between two words presented one fifth of a second apart. This sensitivity develops between 18- and 21-months of age. This suggests gradual integration of information stored in the infant lexicon. Prime does not affect target looking when the target is unnamed, supporting the word-word priming interpretation: Inhibition between unrelated words.

Further Questions
Duration of priming effect? 500ms?
How robust is the effect? What impact does the distracter image have (semantics/phonology)?

References


Further Information
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