

Infants' comprehension of speech produced by children

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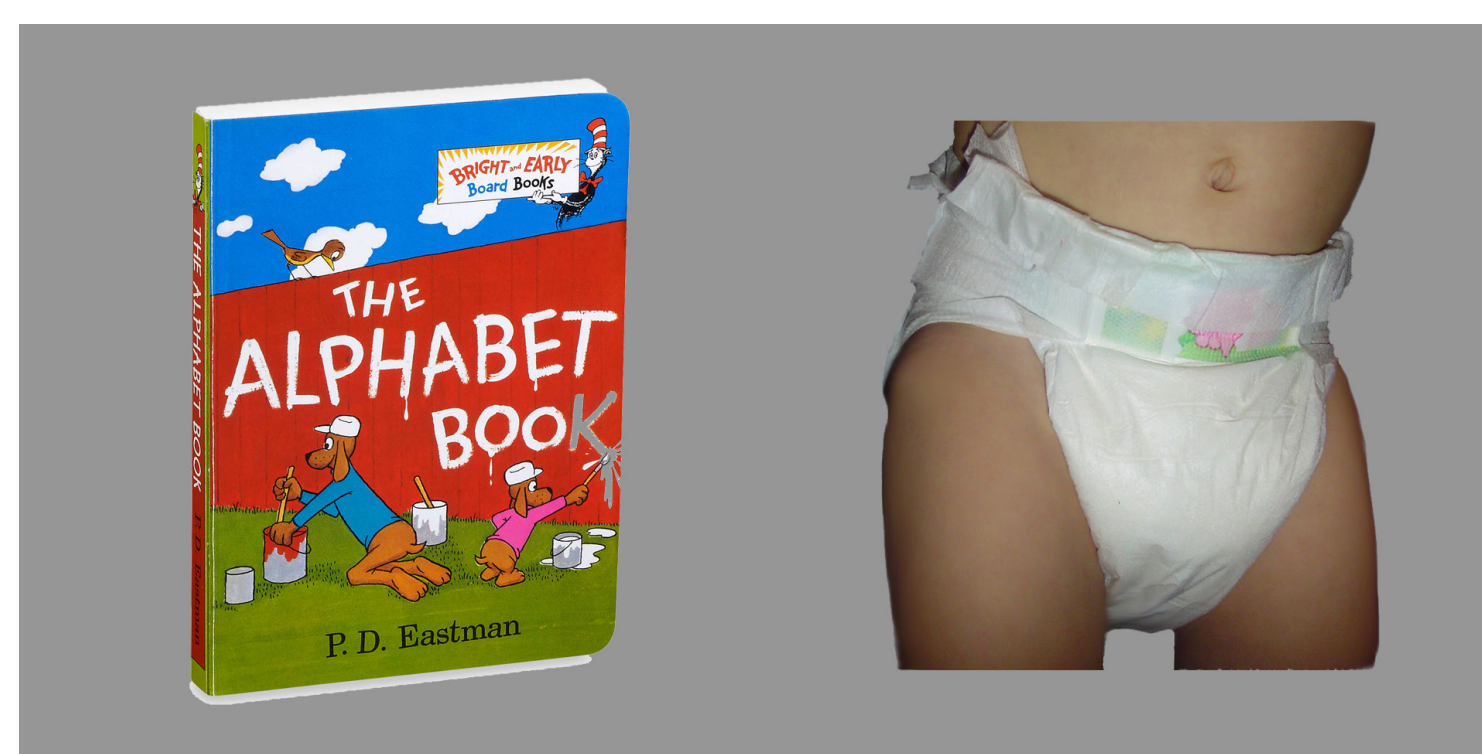
(1) Introduction

Language development is related to experiences with language, but most research has focused on:

- Input from adult caregivers (e.g. Hart & Risley, 1995)
- infants processing speech from adults (e.g. Bergelson & Swingley, 2012)

In the US, 80% of households with children have >1 child (Census Bureau, 2010)

- Focus on adult caregiver speech does not fully capture the experience of the majority of children
- Infants with older siblings exhibit lower language skills (e.g. Havron et al., 2019)
 - Thought to be due to resource limitations on behalf of parents (e.g. Blake, 1981)
- But, child-produced speech differs from adult-produced speech (e.g. less clear articulation)
- Could also be that child-produced speech is more difficult to process



Child: Can you find the book?
 Adult: Do you see the diaper?
 Adult: Where is the bottle?
 Child: Look at the car!



(2) Current Study

RQ1. Is child-produced speech more challenging for infants?

RQ2. Does experience with child-produced speech influence performance?

| Participants | N | Age | Siblings | CDI Comprehend | CDI Produce |
|--------------|----|-------------|----------|----------------|-------------|
| 9-11 months | 27 | 10.85 (.75) | N = 15 | 51 (49) | 2 (2) |
| 12-14 months | 29 | 13.87 (.89) | N = 13 | 97 (64) | 14 (14) |

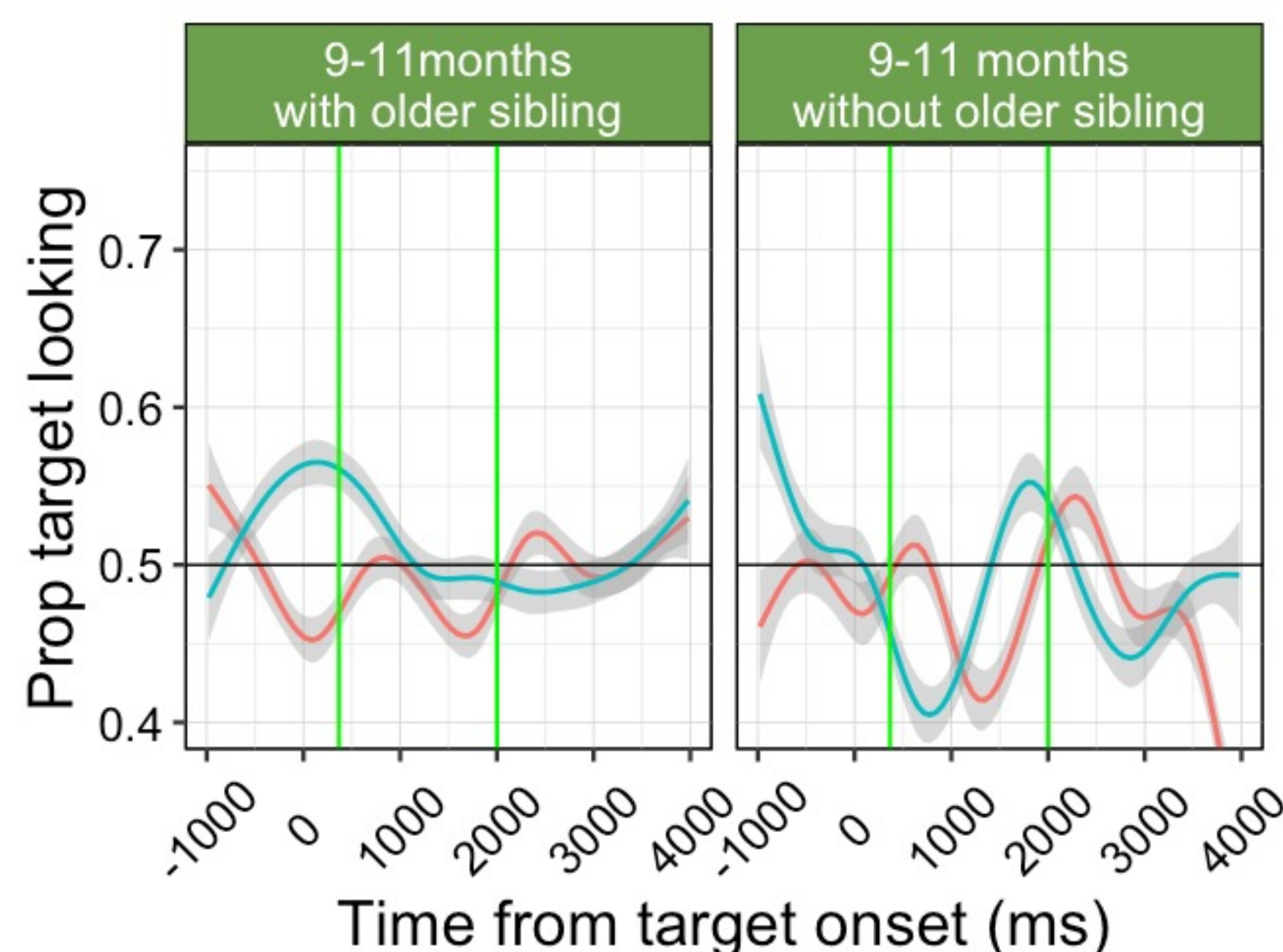
Two picture eye-tracking study (n=32 trials):

- 16 item pairs based on Bergelson & Swingley, 2012
- Produced by adult (n=16) or 5-year-old child (n=16)

Analyses: For each age group, a growth-curve analysis including

- Speaker (Adult or Child)
- SiblingStatus (with or without older sibling)
- Linear, Quadratic and Cubic time terms

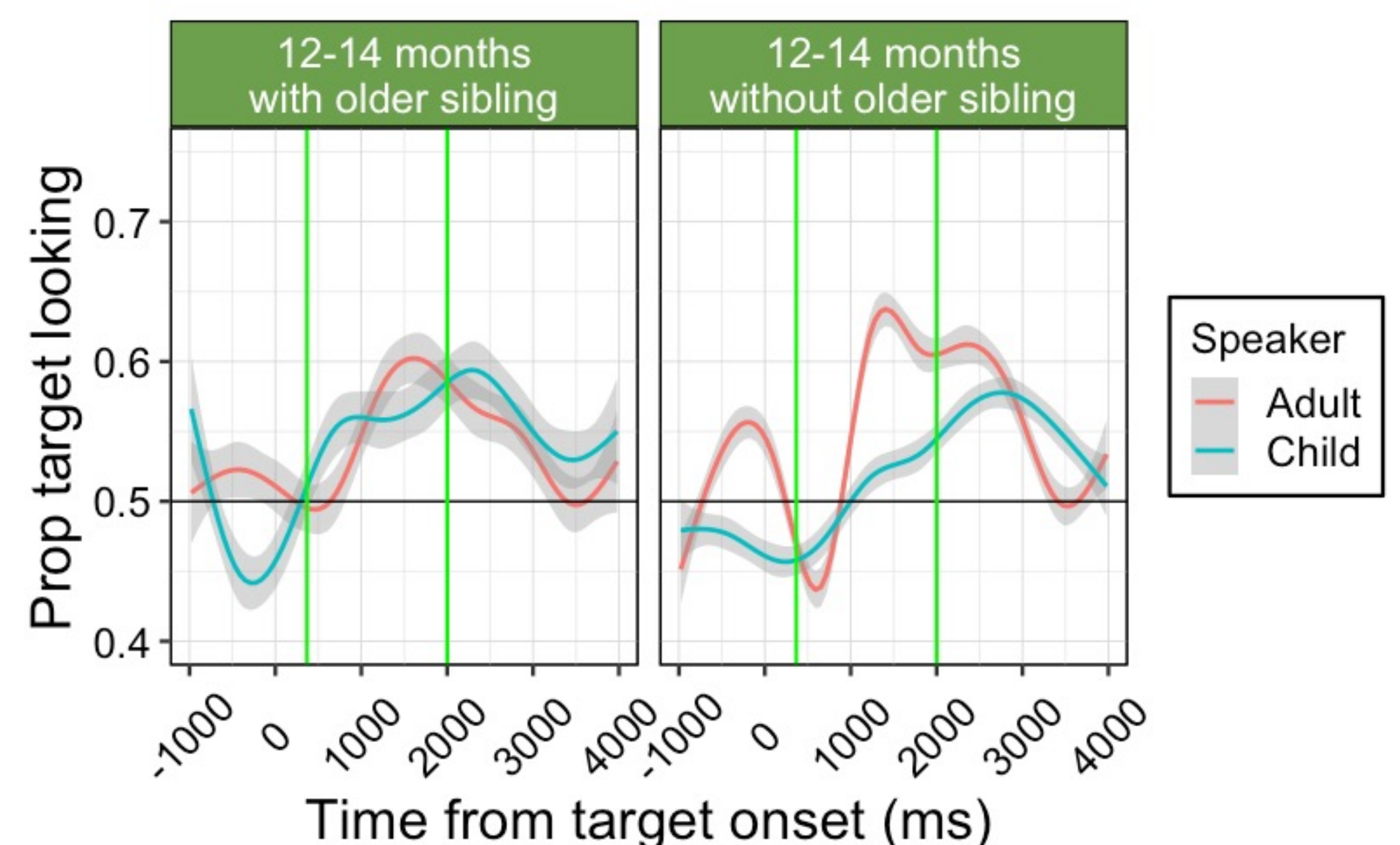
(3) Results



Younger infants (9-11 months) results:

- Looking time did not reliably exceed chance ($p = .7$)

Word recognition with unfamiliar talkers is challenging at this age (Bergelson & Swingley, 2018)



Older infants (12-14 months) results:

- Main effect of Speaker ($p < .001$) – more target looking to Adult vs. Child
- Speaker*SiblingStatus ($p < .001$) – effect of Speaker varies by SiblingStatus
- Linear*Speaker*SiblingStatus ($p < .001$)
 - Steeper target looking for Adult speech for infants without older sibling
- Cubic*Speaker*SiblingStatus ($p < .001$)
 - "Peak" target looking varies by Speaker and SiblingStatus

(4) Conclusions

RQ1. Is Child-produced speech more challenging for infants

- Child-produced speech seems to be more challenging than adult-produced speech, but effect driven by 12-14-month-olds without older siblings
- Younger infants (9-11-month-olds) struggle with word recognition, regardless of Speaker age

RQ2. Does experience with child-produced speech influence performance?

- Older infants who have experience with child-produced speech do not exhibit differences in processing Adult vs. Child-produced speech

Infants with older siblings may have to process more challenging input, but by 12-14 months, they appear to be used to this challenge

- Important for us to consider role of different sources of speech on language processing and learning

Citations

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Acknowledgements

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