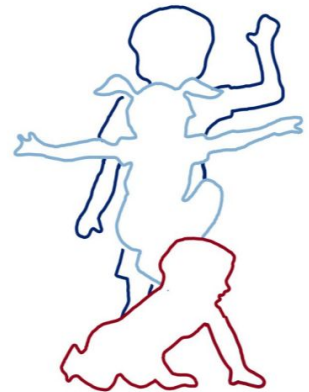


The role of language context in the acquisition of novel words

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Word learning is difficult

Look at the wug!



Carey & Bartlett, 1978; Yurovsky, Fricker, & Yu, 2014; Horst & Samuelson, 2008; Hoff-Ginsberg, 1990.

Children accomplish it with ease

Using constraints & heuristics

- **Mutual exclusivity**
- Shape bias
- Social cues

Markman & Wachtel, 1988

What about the surrounding language context?

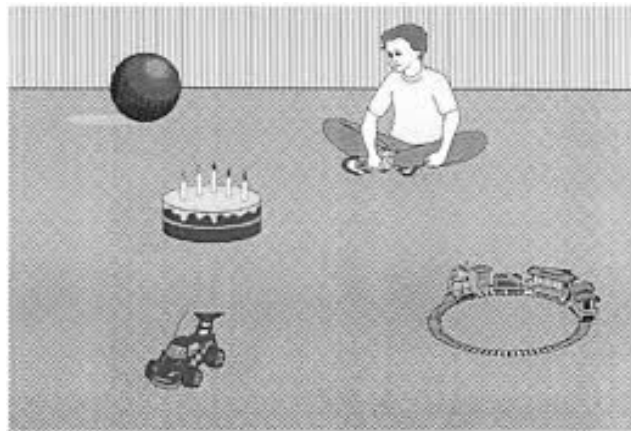
Language context must
be just as important

Language context as a tool

- ▷ Identifying the intended referent
- ▷ Deciding whether it's a good learning moment
- ▷ Predicting & hypothesizing meaning across instances

Similarly to how adults use context to predict upcoming familiar nouns

Altmann & Kamide, 1999; Trueswell et al., 1999



Long-Term Question

How does language context contribute to the acquisition of noun meaning?

First Step

Can children use language context to identify upcoming novel nouns?

Experiment:

*Do adults use language context to mediate
the acquisition of novel nouns?*

Experiment Design

- 25 adult participants on Prolific
- 24 trials
 - Mutual exclusivity = always informative
 - Language context = informative half the time

Mary wants to **eat** the **gutch**

INFORMATIVE

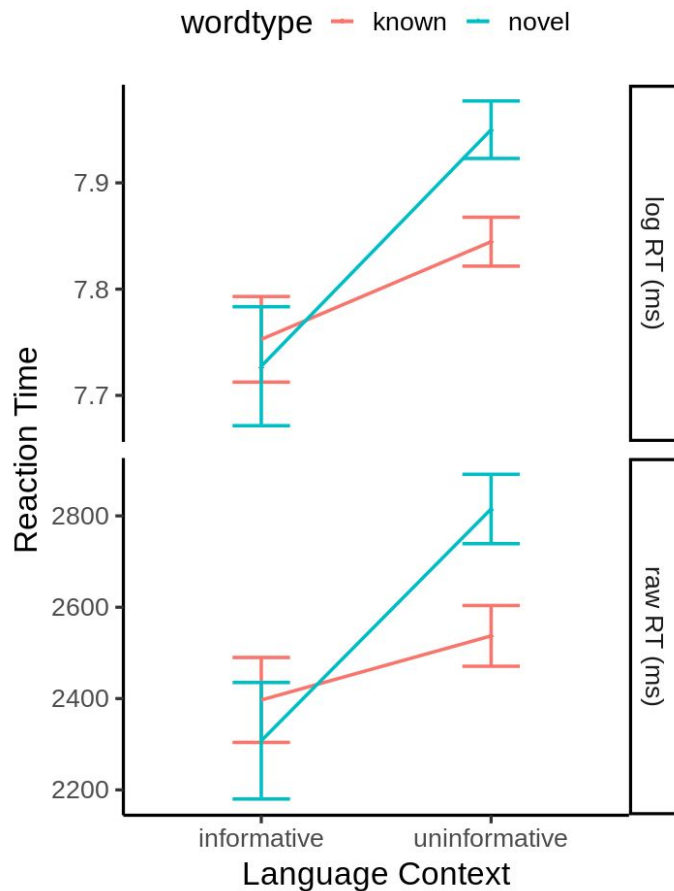
trials disambiguate at verb



UNINFORMATIVE

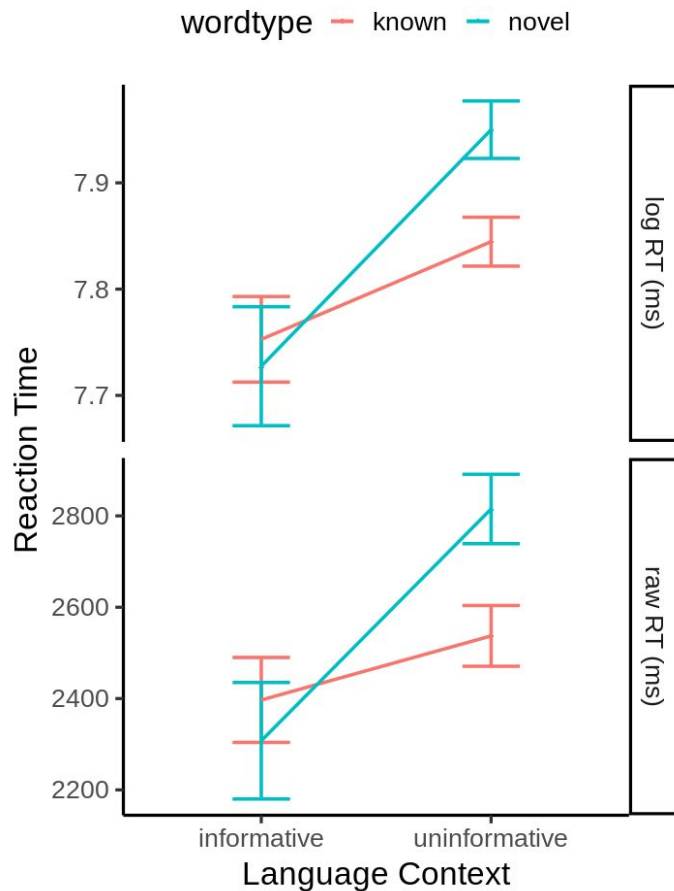
trials disambiguate at object





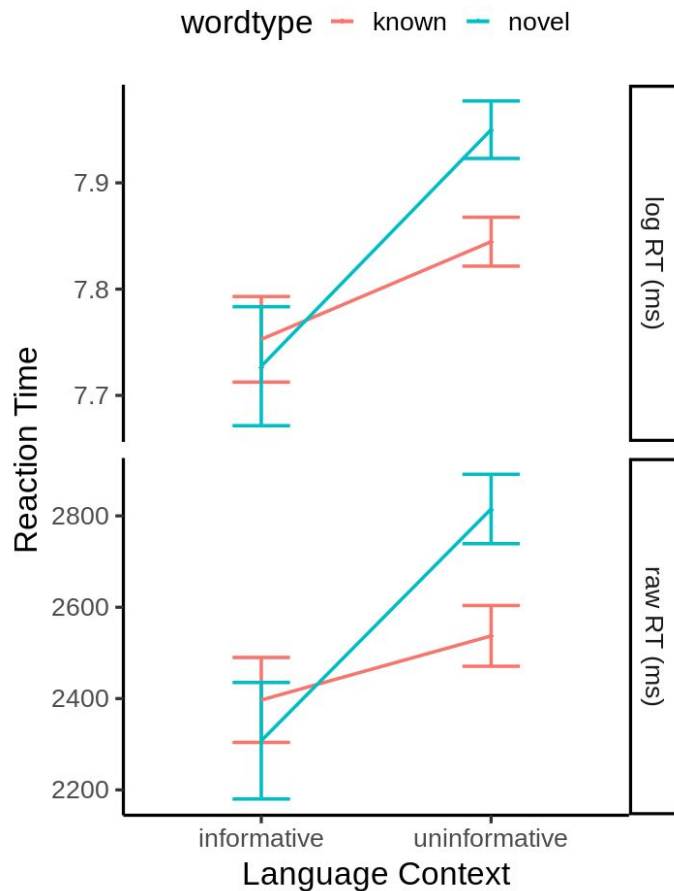
Main Effect

Longer to select target
when context is
uninformative
($\chi^2(1)=55.42, p<0.001$)



Main Effect

Longer to select target
when word is **novel**
($\chi^2(1)=8.38, p<0.001$)



Interaction

Effect of word type
depends on **language**
context
($\chi^2(1)=13.36, p<0.001$)

Key Takeaways


- ▷ Learners can use verb information to predict upcoming nouns, whether **novel or known**
- ▷ Might be able to predict meanings of **upcoming novel words**, even before they are heard
- ▷ **Follow-up experiments:**
 - Whether (and when) children can use language context to acquire novel word meanings
 - How these constraints and cues operate together to help children acquire novel words in noisy environments.
- ▷ Broader implications for **early vocabulary development**

Thank you!

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- ▶ Carey, S., & Bartlett, E. (1978). Acquiring a single new word. *Papers and Reports on Child Language Development*, 15, 17-29. Retrieved from <https://proxy.library.upenn.edu/login?url=https://www-proquest-com.proxy.library.upenn.edu/docview/58071826?accountid=14707>
- ▶ Golinkoff, R.M., Hoff, E., Rowe, M.L., Tamis-LeMonda, C.S. and Hirsh-Pasek, K. (2019), Language Matters: Denying the Existence of the 30-Million-Word Gap Has Serious Consequences. *Child Dev*, 90: 985-992. <https://doi.org/10.1111/cdev.13128>
- ▶ Horst, J. & Samuelson, L. (2008). Fast mapping but poor retention by 24-month-old infants. *International Society on Infant Studies*, 13(2). 128-157. <https://doi-org.proxy.library.upenn.edu/10.1080/15250000701795598>
- ▶ Yuan S, Fisher C. "Really? She blicked the baby?": two-year-olds learn combinatorial facts about verbs by listening. *Psychol Sci*. 20(5):619-26. doi: 10.1111/j.1467-9280.2009.02341.x. PMID: 19476591; PMCID: PMC3989287.
- ▶ Yurovsky, D., Fricker, D.C., Yu, C. et al. (2014). The role of partial knowledge in statistical word learning. *Psychon Bull Rev* 21, 1–22. <https://doi-org.proxy.library.upenn.edu/10.3758/s13423-013-0443-y>

AUX Slide

Log RT

	Est	SE	t
(Intercept)	7.81	0.03	251.01
wordtype	0.04	0.02	2.07
langcontext	0.16	0.02	9.48
wordtype:langcontext 	0.14	0.03	4.05

Raw RT

	Est	SE	t
(Intercept)	2569.12	76.77	33.46
wordtype	143.79	44.66	3.22
langcontext	350.39	44.62	7.85
wordtype:langcontext	327.22	89.23	3.67