

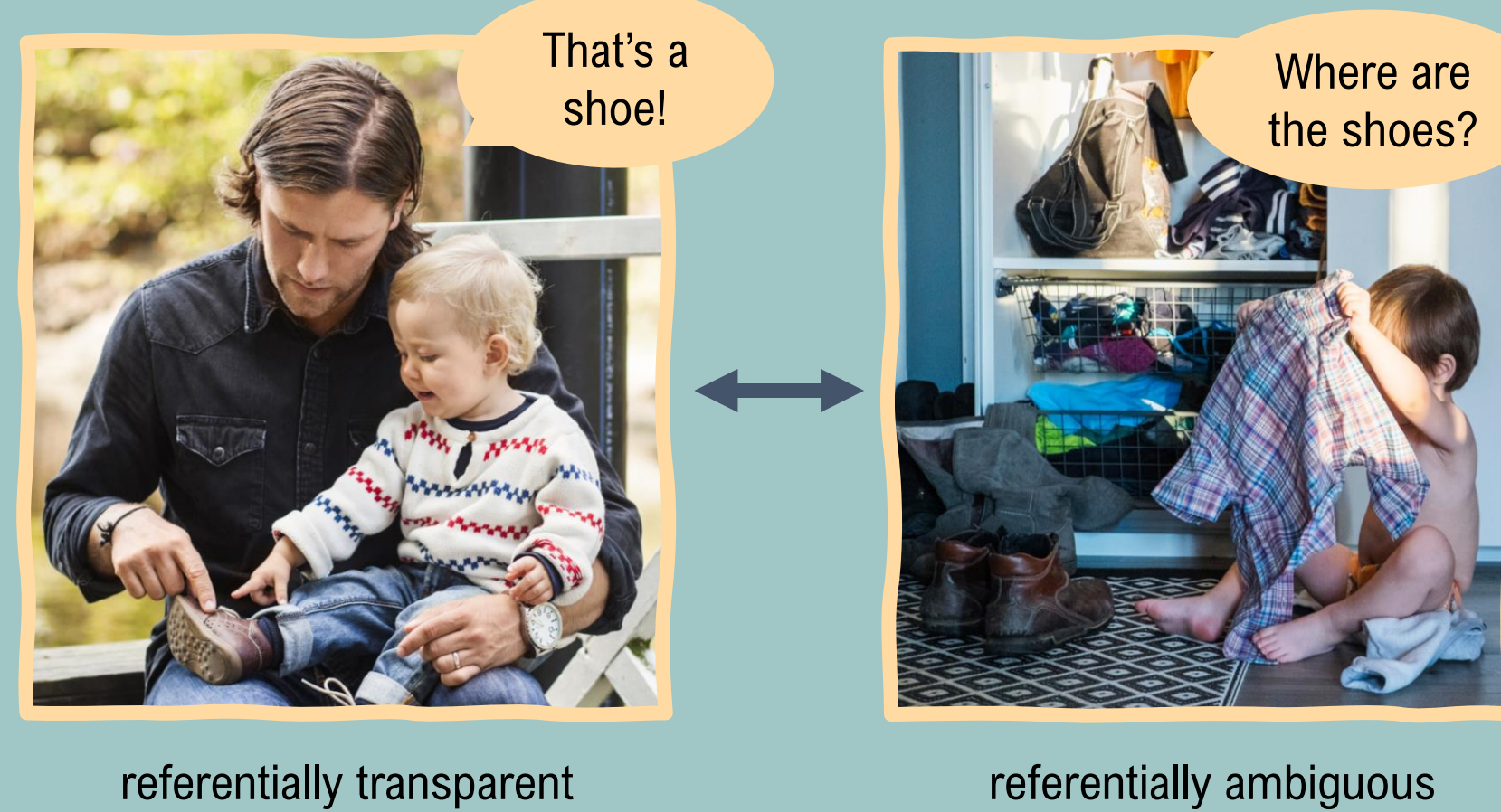
Partial Word Learning from Referentially Ambiguous Naming Events

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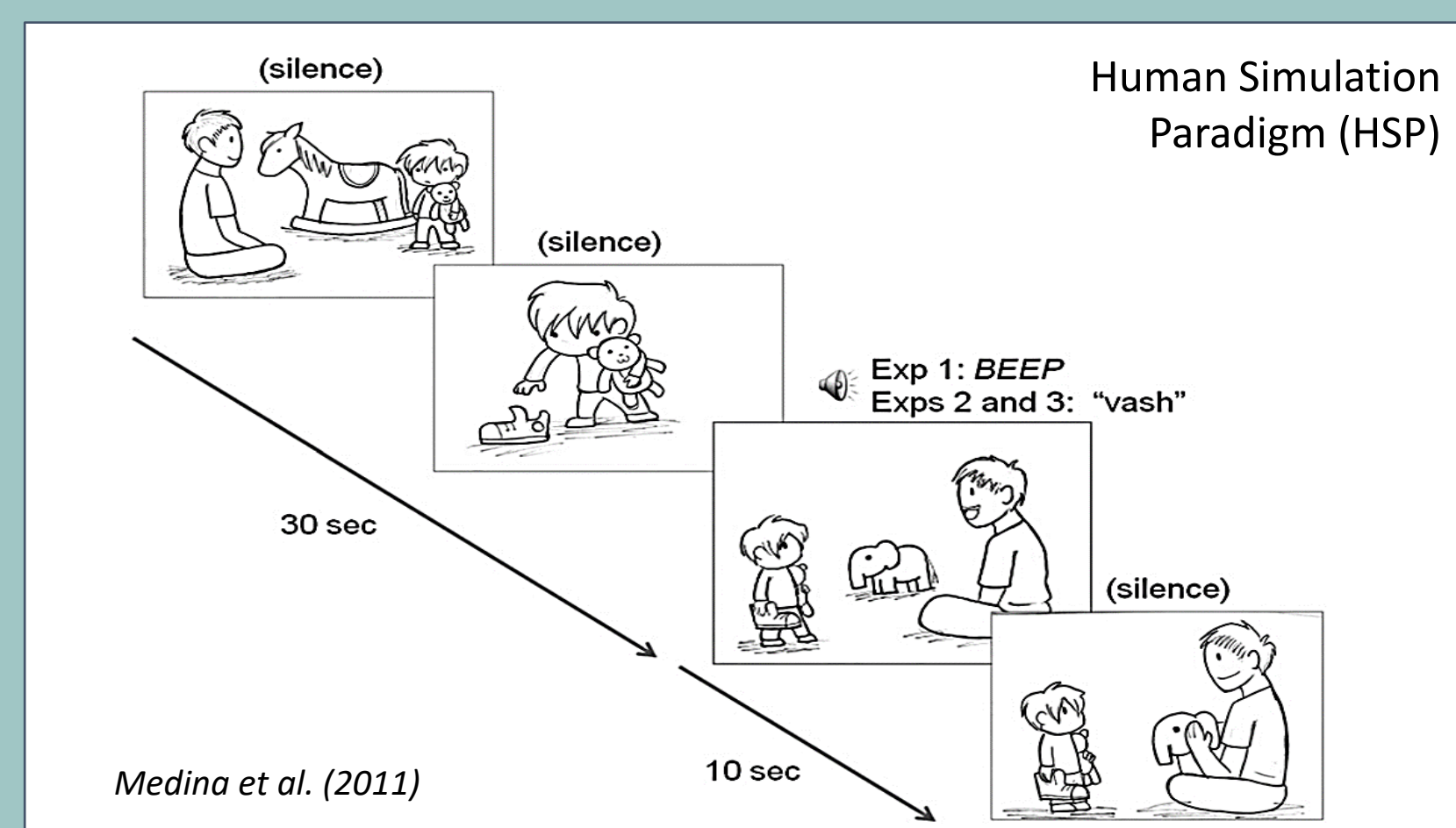


INTRODUCTION

- Word learners experience naming events that vary widely in their referential quality

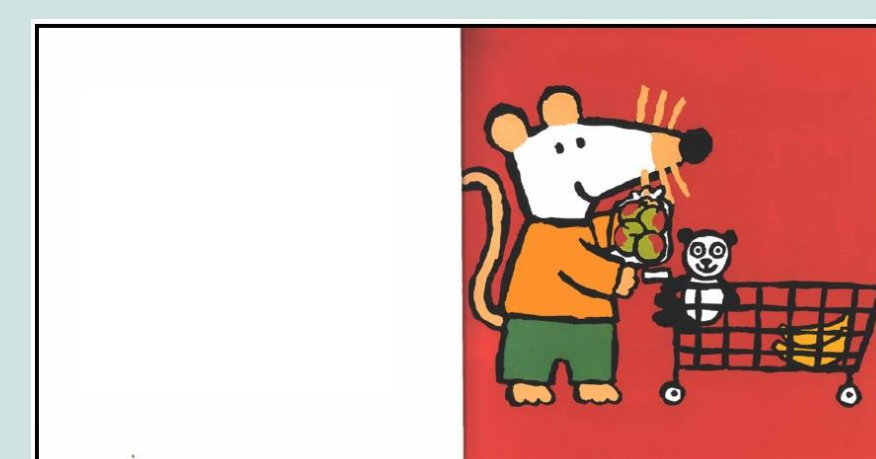


- Research is mixed on whether word learning is shaped by a few referentially transparent events or also by the referentially ambiguous ones

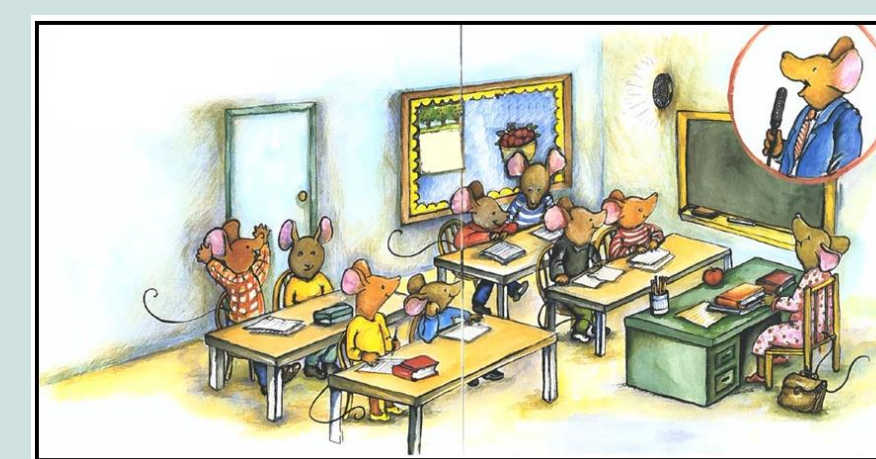


- Current study: could referentially ambiguous events support *partial* word learning even when they do not lead to *full* word learning?

NORMING STUDY



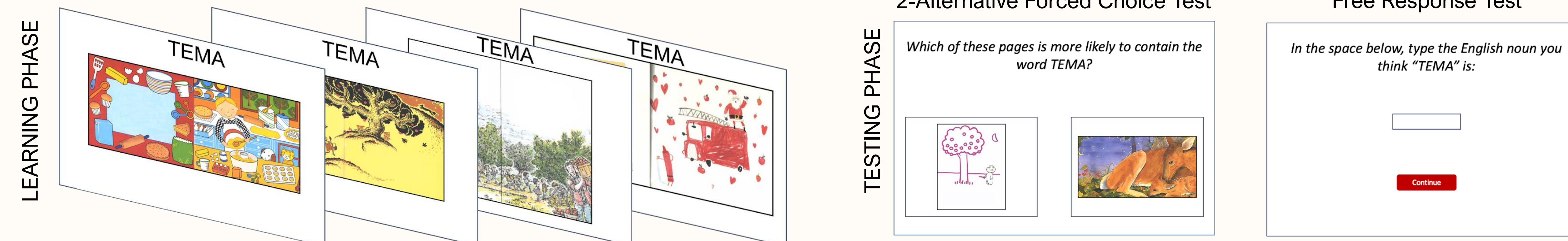
APPLE Stimulus Normed at 0.125



APPLE Stimulus Normed at 0

- Naming events from children's picture books were normed for their referential quality
- Naming events ranged from ambiguous to transparent, as in child-directed speech^{1,2}
- Current experiments utilized only ambiguous naming events

METHODS



- Task Design:** HSP was modified to probe both: (A) learning of precise word meaning (via free-response/FR test) and (B) learning of partial word meaning (via alternative-forced choice/AFC test)
- Procedure:** 120 adult participants completed 8 blocks (each with a unique target word) of 9 learning trials followed by 3 test trials

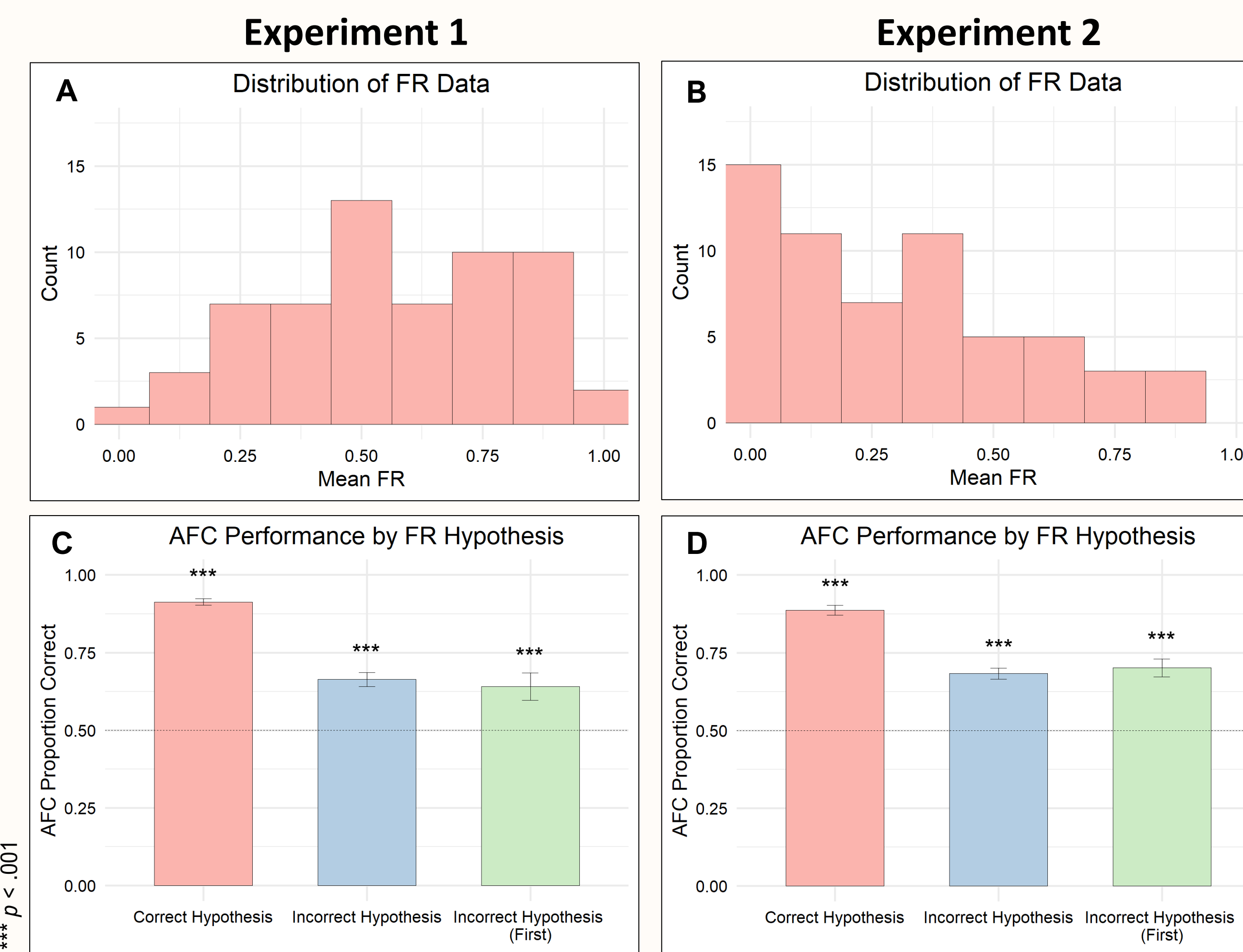
RESULTS

Experiment 1 – Ambiguous Events

- Participants failed to learn the precise meaning of the novel word in 43.5% of cases (Fig. A)
- When participants did not learn the precise word meaning, they nonetheless guessed above chance on AFC trials
- Performance on AFC was high even when only considering the first of three test trials (Fig. C)

Experiment 2 – Highly Ambiguous Events

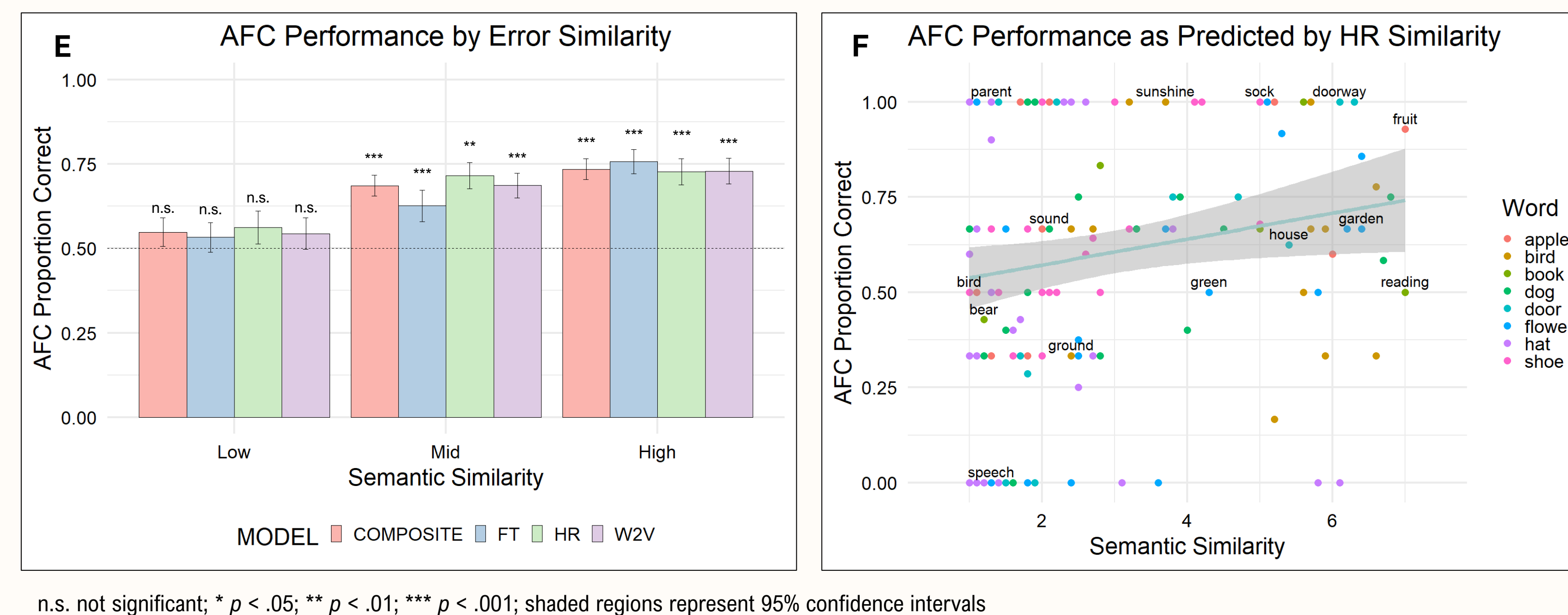
- Aimed to replicate Exp. 1 with all features identical except with highly ambiguous stimuli
- Participants failed to learn the precise meaning of the novel word in 70.6% of cases (Fig. B)
- Despite significantly lower performance on the FR, learning was similar to Exp. 1 as measured by AFC trials (Fig. D)



RESULTS

Error Analyses (Exp. 1)

- Relationship between errors and AFC performance provides a window into what accounts for partial knowledge
- Errors were rated by humans and two computational models (using word2vec and fastText) (Fig. E)
- High similarity errors are sufficient but not necessary for success at AFC task (Fig. F)

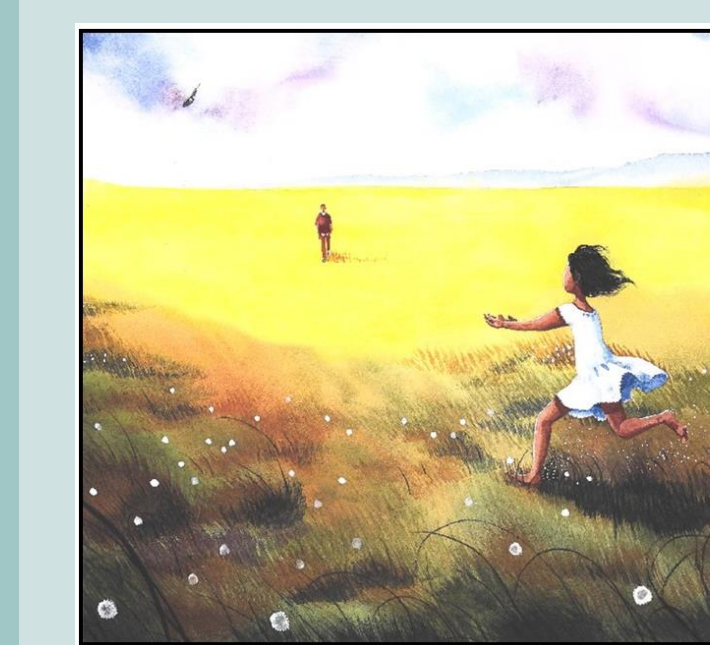


DISCUSSION

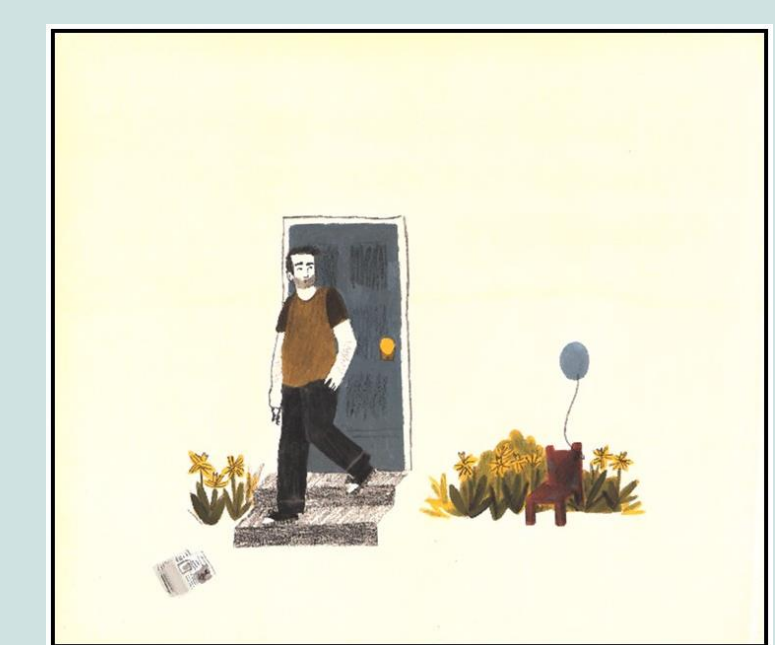
- Referentially ambiguous naming events make up a large portion of the input³
- However, whether they contribute to word learning is a matter of great interest and debate⁴
- The current study asks whether their role may depend on what counts as *learning*
- Current results suggest that participants acquire usable partial knowledge not evident from a free response alone
- Results are consistent with previous studies documenting the role of partial knowledge in lexical development
- Implications of this work include that the HSP may underestimate learning from referentially ambiguous stimuli

FUTURE DIRECTIONS

- Investigate the mechanisms and processes that drive the current partial knowledge effects
- Explore whether effects extend to abstract nouns and other word classes (e.g., verbs)



RUN Stimulus



LOOK Stimulus

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