

What Counts as Learning Matters: How Words are Learned in a Malevolent Referent World

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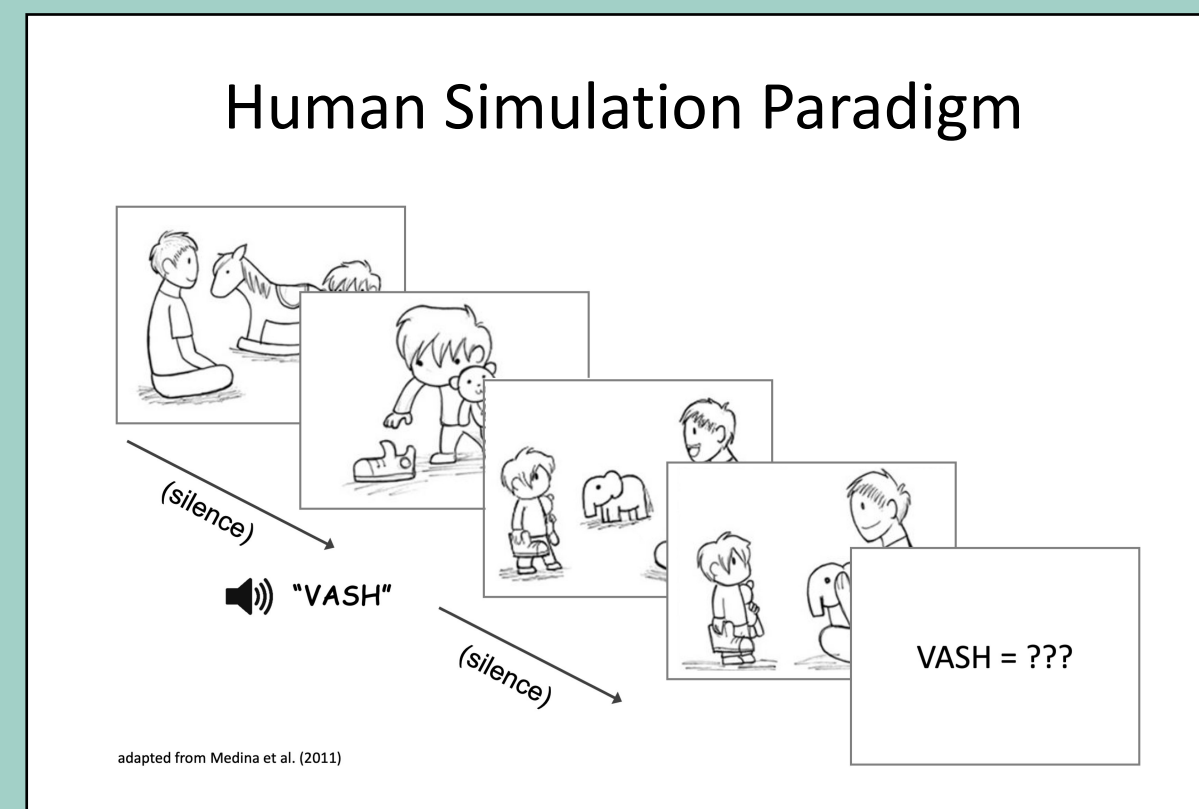
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INTRODUCTION



- Classic philosophical thought experiments¹ and recent experimental paradigms² have argued that the puzzle of early word learning is to explain how children overcome the referential ambiguity of the words they hear.
- Human Simulation Paradigm studies (HSP; top right) have shown that even adults struggle to identify exact word meanings from their observational contexts³; these data have shaped current theories on the input to learning⁴
- Missing from these discussions is that learning *exact* meanings is a protracted process⁵, and that early learning likely involves learning *partial* meanings^{6,7}.
- This work revisits the HSP and asks whether its stringent “exact” meaning criterion for learning underestimates the informativity and thus the contributions of observational contexts to word learning.

METHODOLOGY

Overview

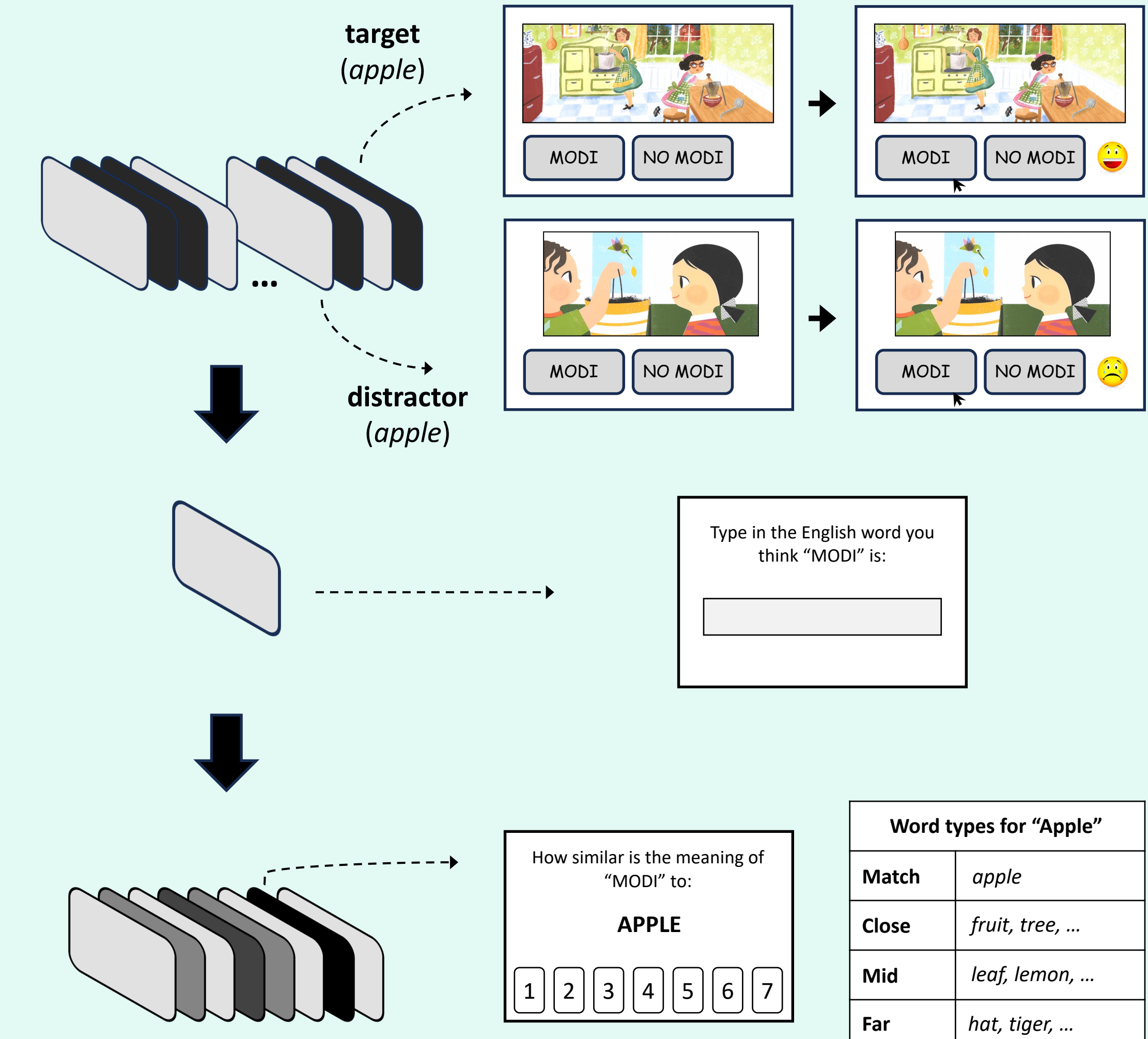
- In three studies, adults learned a novel word (“MODI”) that corresponded to an English word (e.g., “apple”) from referentially ambiguous scenes where the word occurred.
- Like prior HSP studies, learning was assessed via a Word Identity Task. However, learning was also assessed during the learning phase via a Scene Classification Task and after the learning phase via a Semantic Rating Task.
- Of interest is whether those who failed at learning the novel word’s exact meaning in the Word Identity Task showed some partial learning in the other tasks.

Sample Referentially Ambiguous Scenes (“apple”)



I. Scene Classification Task

- Participants saw 32 scenes (divided into four blocks) that either did (target) or did not (distractor) contain the novel word; their task was to classify the scenes into targets and distractors



II. Word Identity Task

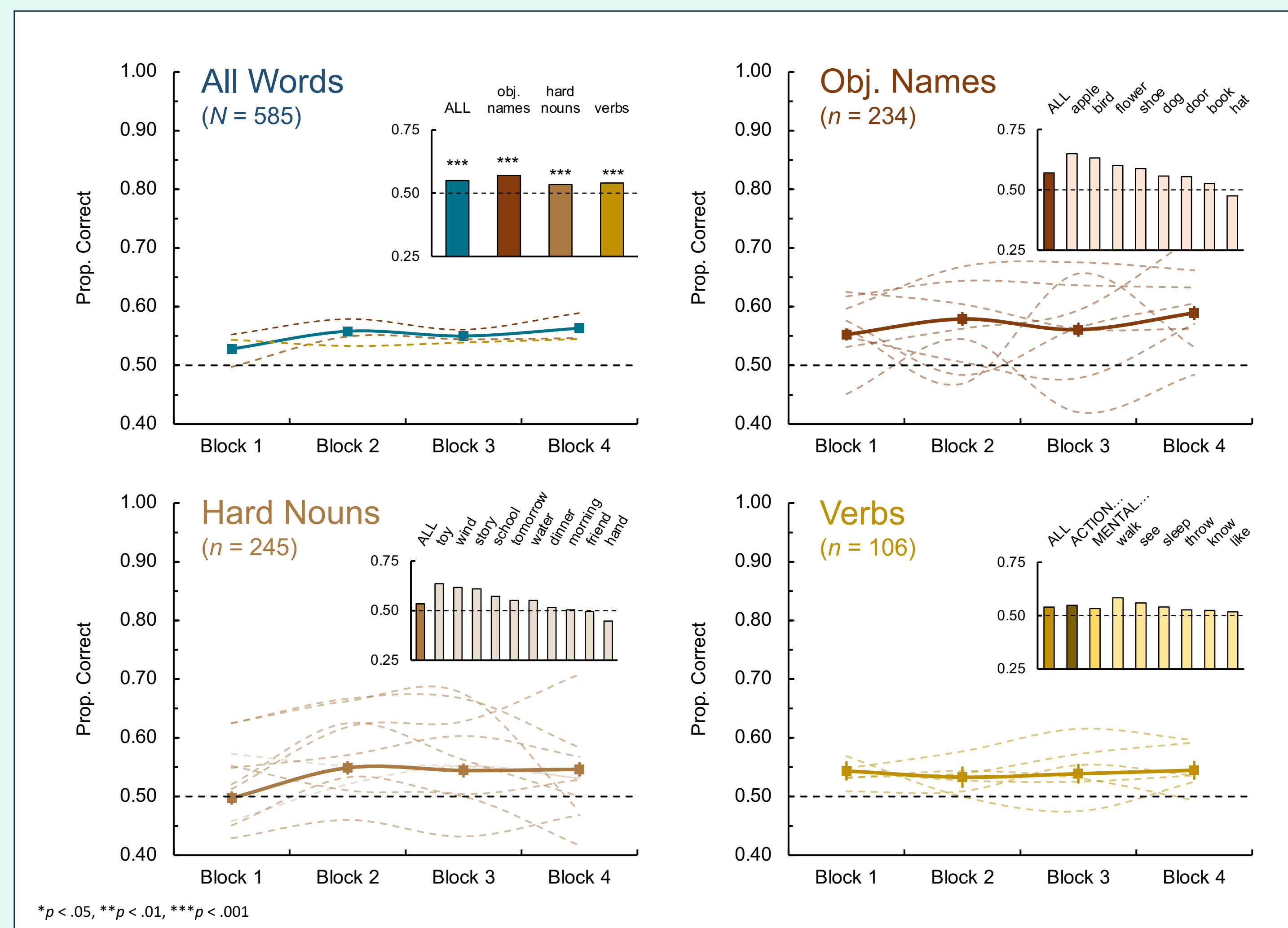
- As in prior HSP studies, participants guessed the identity of the novel word
- Of most interest is how those who failed in this task performed in the other tasks

III. Semantic Rating Task

- Participants rated how similar in meaning the novel word was to English words, including the “match” (English translation), as well as words that were “close”, “middle”, or “far” in meaning.

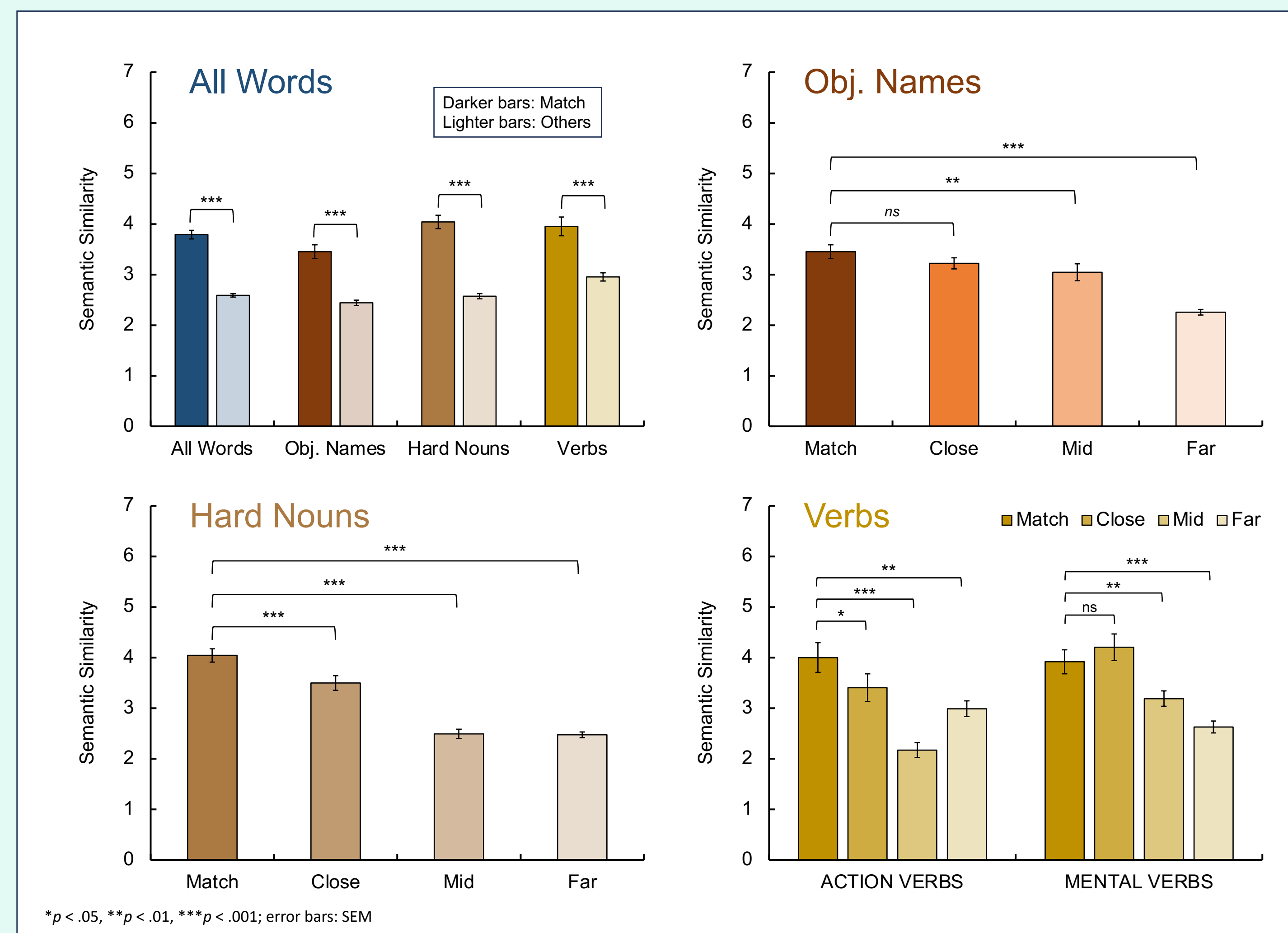
RESULTS

Scene Classification Task



- Participants who failed to identify the novel word’s exact meaning still succeeded at classifying scenes that did and did not contain the novel word, regardless of word type

Semantic Rating Task



- Participants who failed to identify the novel word’s exact meaning (its English translation) still placed its meaning in the right broad regions of semantic space

DISCUSSION

- The classic paradox at the heart of early word learning research is how to reconcile the prodigiousness and rapidity of learning with the high degree of difficulty involved in learning even a single word.
- The main take-home message of the current research is that our definitions of what counts as learning is not inconsequential to resolving this paradox.
- In a series of studies, we revisit findings that have questioned the role that a word’s observational contexts play in learning and find that the role that such contexts play depend on how learning is assessed and thus defined.
- These findings are a reminder that there are degrees to knowing a word’s meaning, and that the level of knowing used to describe children’s impressive rates of learning and vocabulary sizes may not be the same as the level of knowing used to describe the difficulty of the task of learning.

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