

# Learning Words From Referentially Ambiguous Naming Events: Evidence From a New Artificial Word Learning Paradigm

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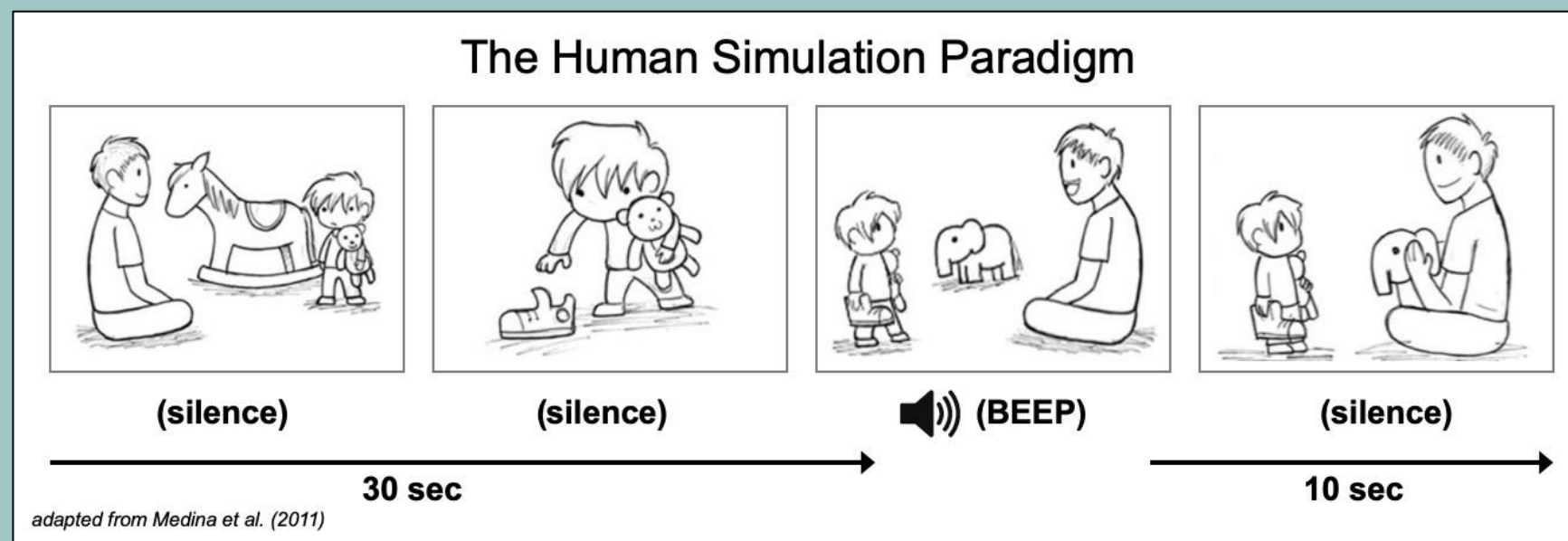


## INTRODUCTION

- Children learn words in a notoriously challenging learning environment.<sup>1</sup>



- Studies using the “Human Simulation Paradigm” (HSP) have found that most naming events children experience are referentially ambiguous.<sup>2,3</sup>



- HSP studies implementing a cross-situational design, with multiple referentially ambiguous events for a target word, found that learners still struggle to identify the meaning of that word.<sup>2</sup>

- In the HSP, word learning is assessed using an all-or-nothing threshold, leaving open the possibility that learners in previous HSP studies may have acquired partial word knowledge from referentially ambiguous events.

## CURRENT STUDY

- The current study modifies the HSP design to include multiple measures of learning, designed to assess different levels of learning from referentially ambiguous events.
- In addition to soliciting participants' guesses about the word's meaning, as done in previous HSP studies, we examined:
  - The nature of the errors participants made.
  - Participants' ability to categorize scenes that did and did not contain the word.
  - How participants placed the word in semantic relation to other words.

## METHODS

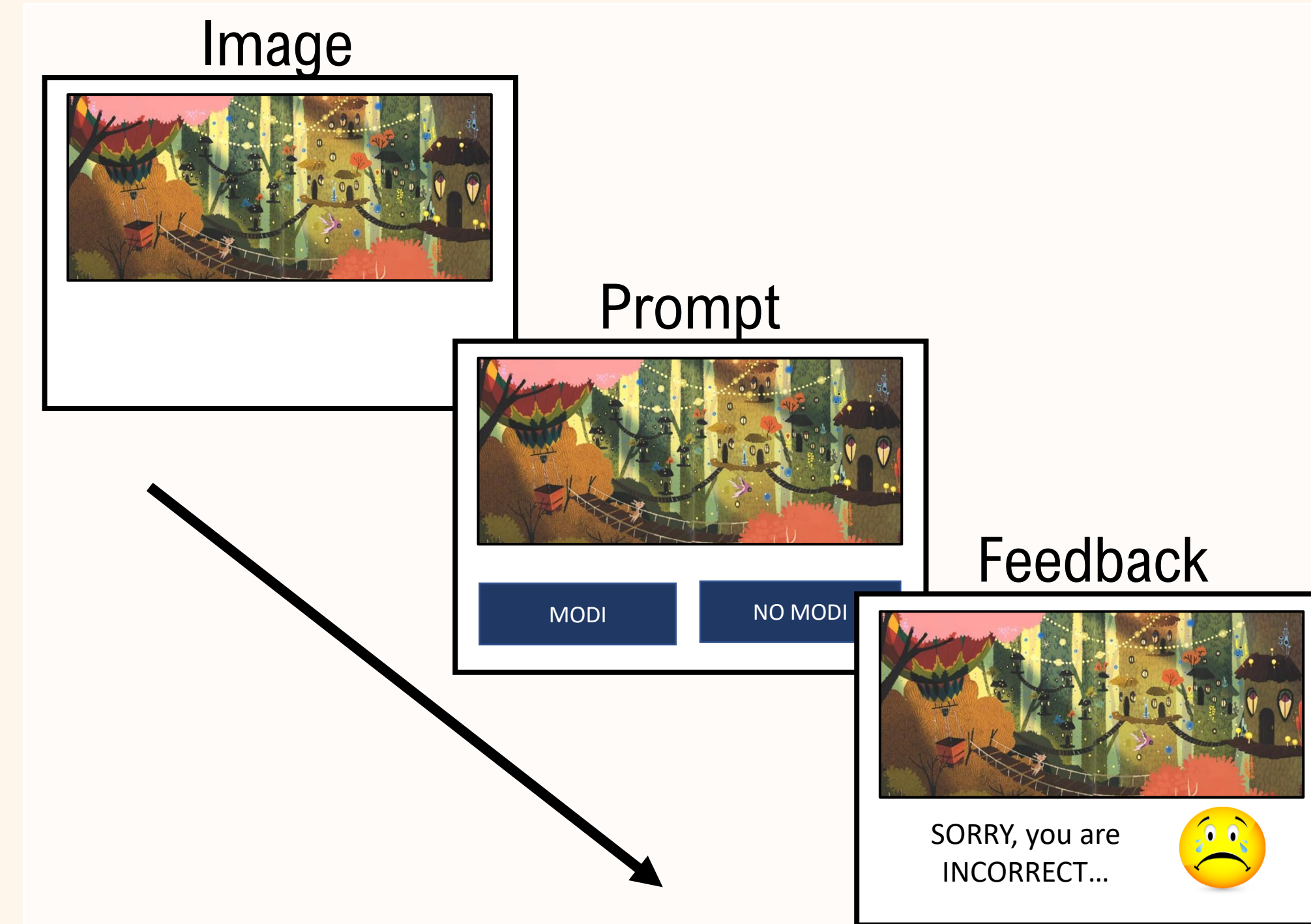
### Norming Study



- All stimuli were individually normed to be referentially ambiguous (0 norming study participants identified the target word)

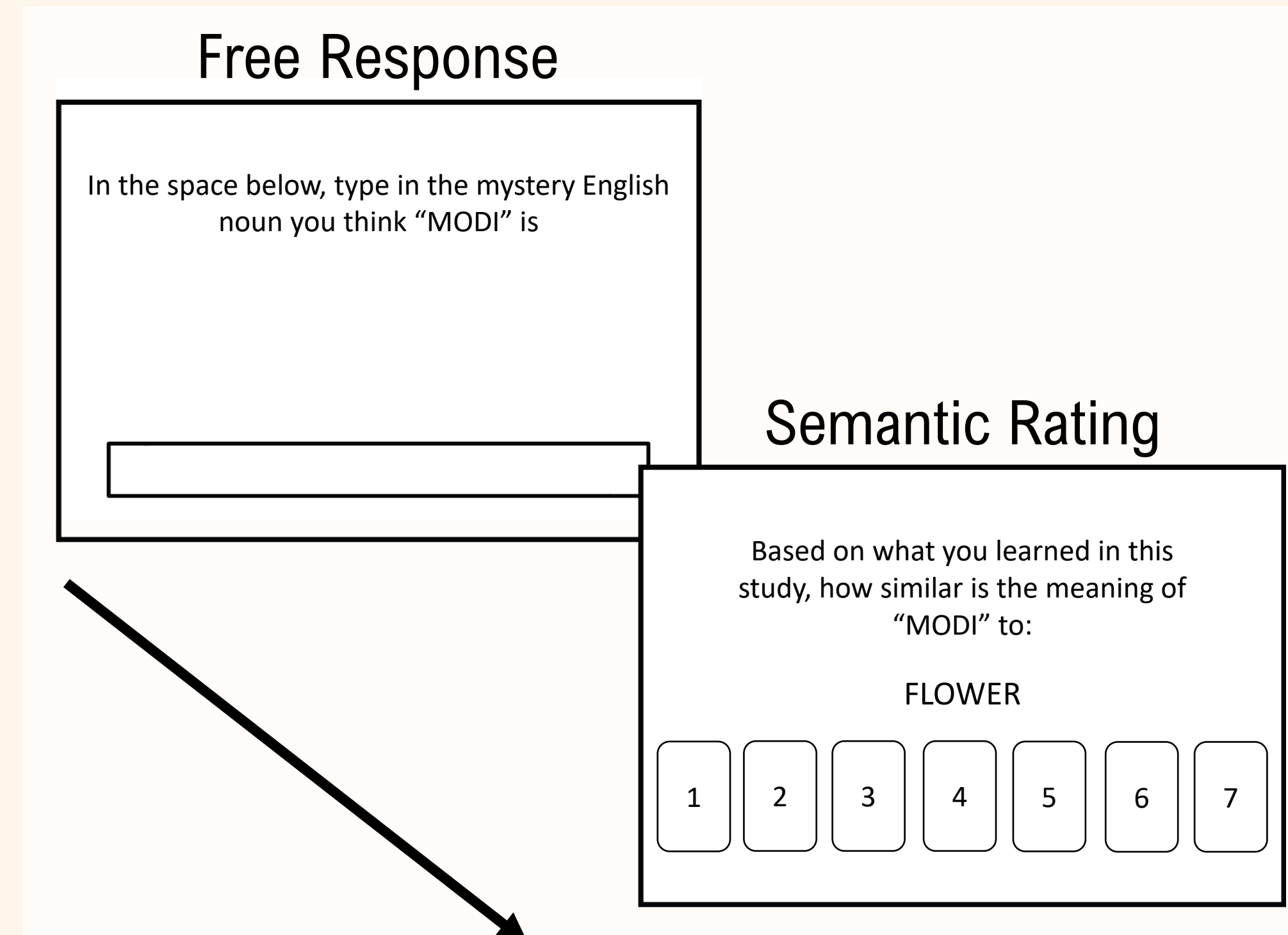
### Experimental Design

#### Learning Phase: Categorization Task



- Participants had to categorize 32 scenes that did and did not contain the mystery word (16 targets; 16 distractors).

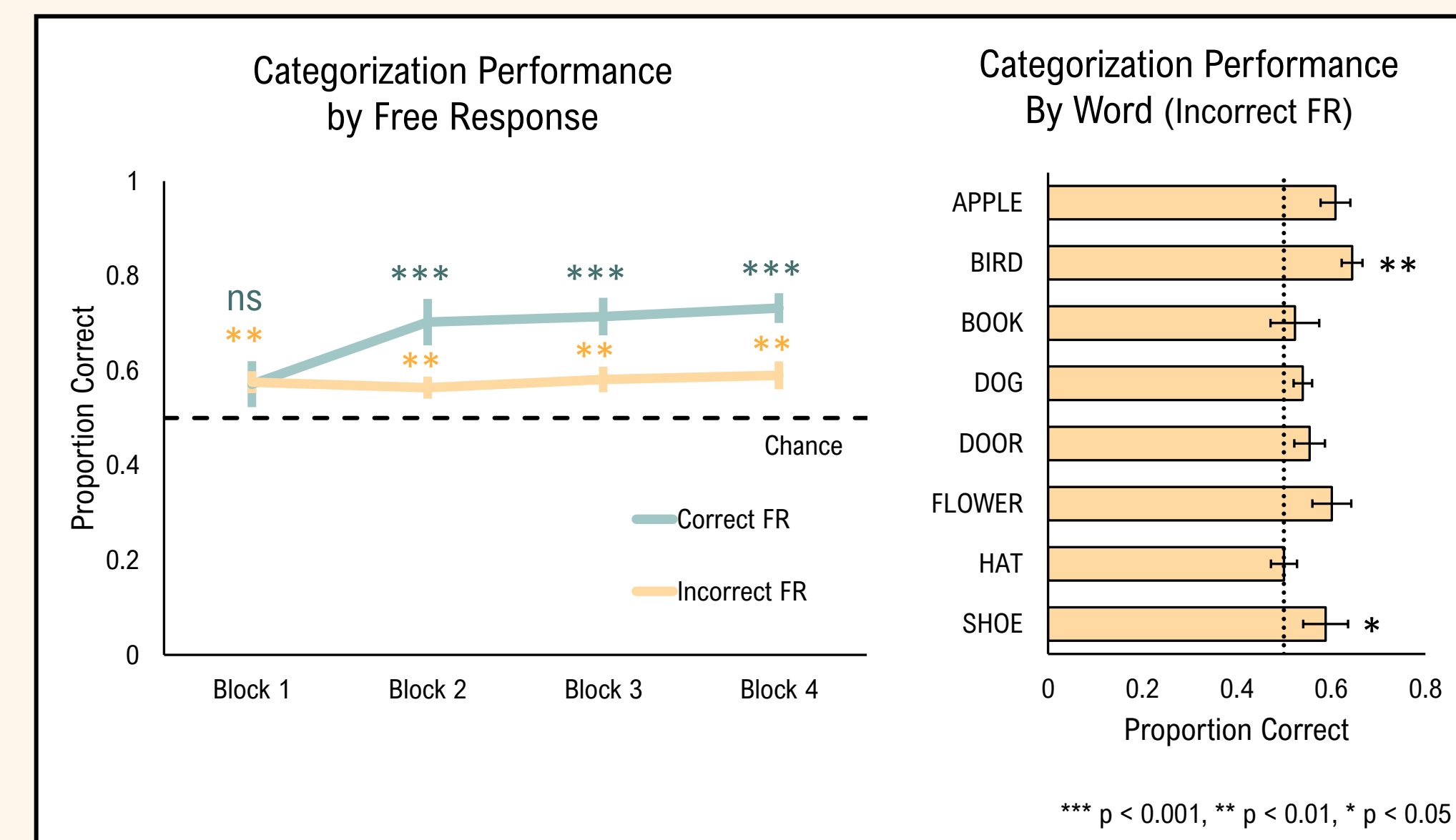
#### Testing Phase



- Free Response Test (FR): Participants guessed the identity of the mystery word at the end of the categorization task.
- Semantic Rating Test: 9 trials using a 7-point Likert scale.

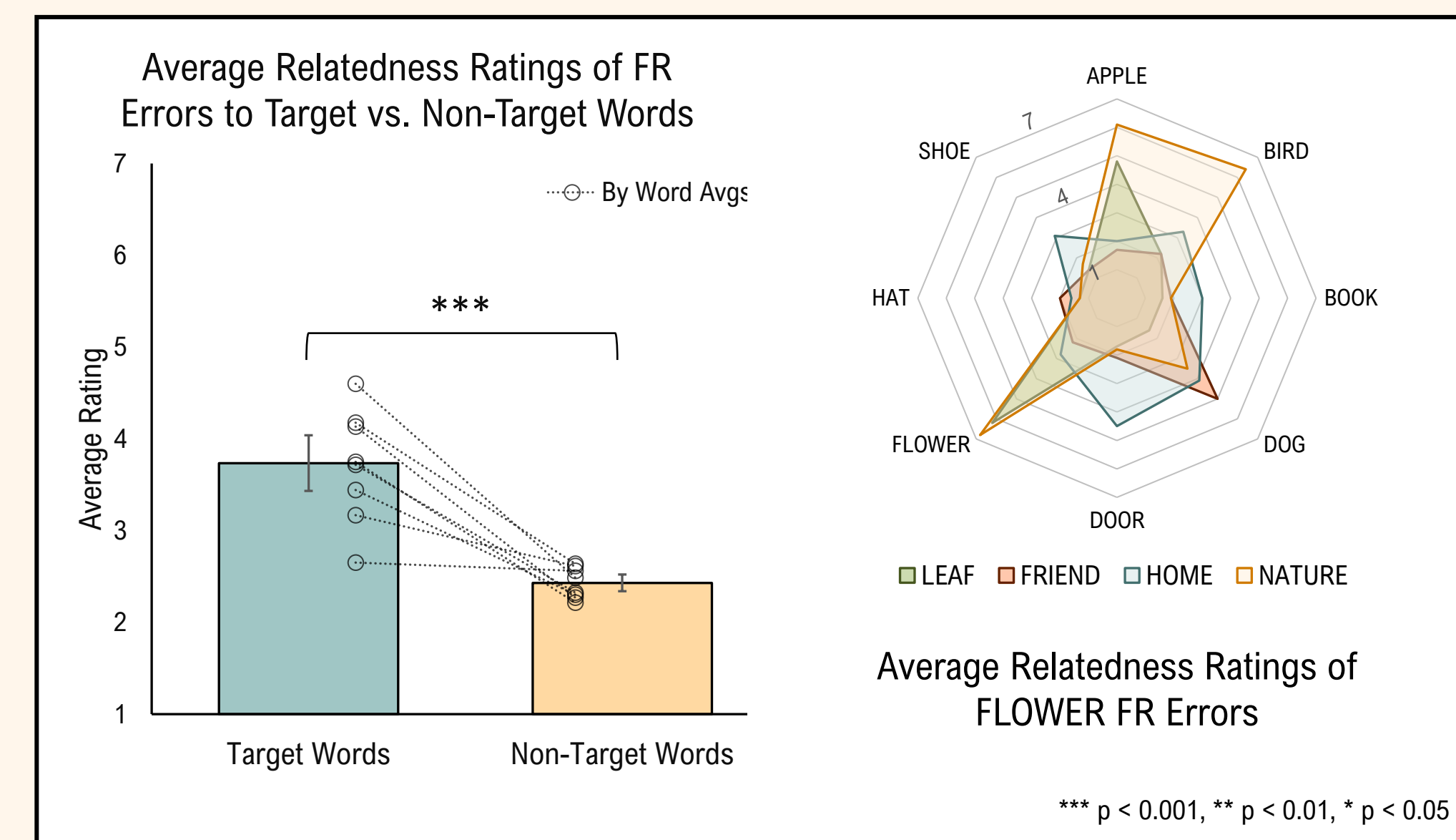
## RESULTS

### Categorization Performance By FR



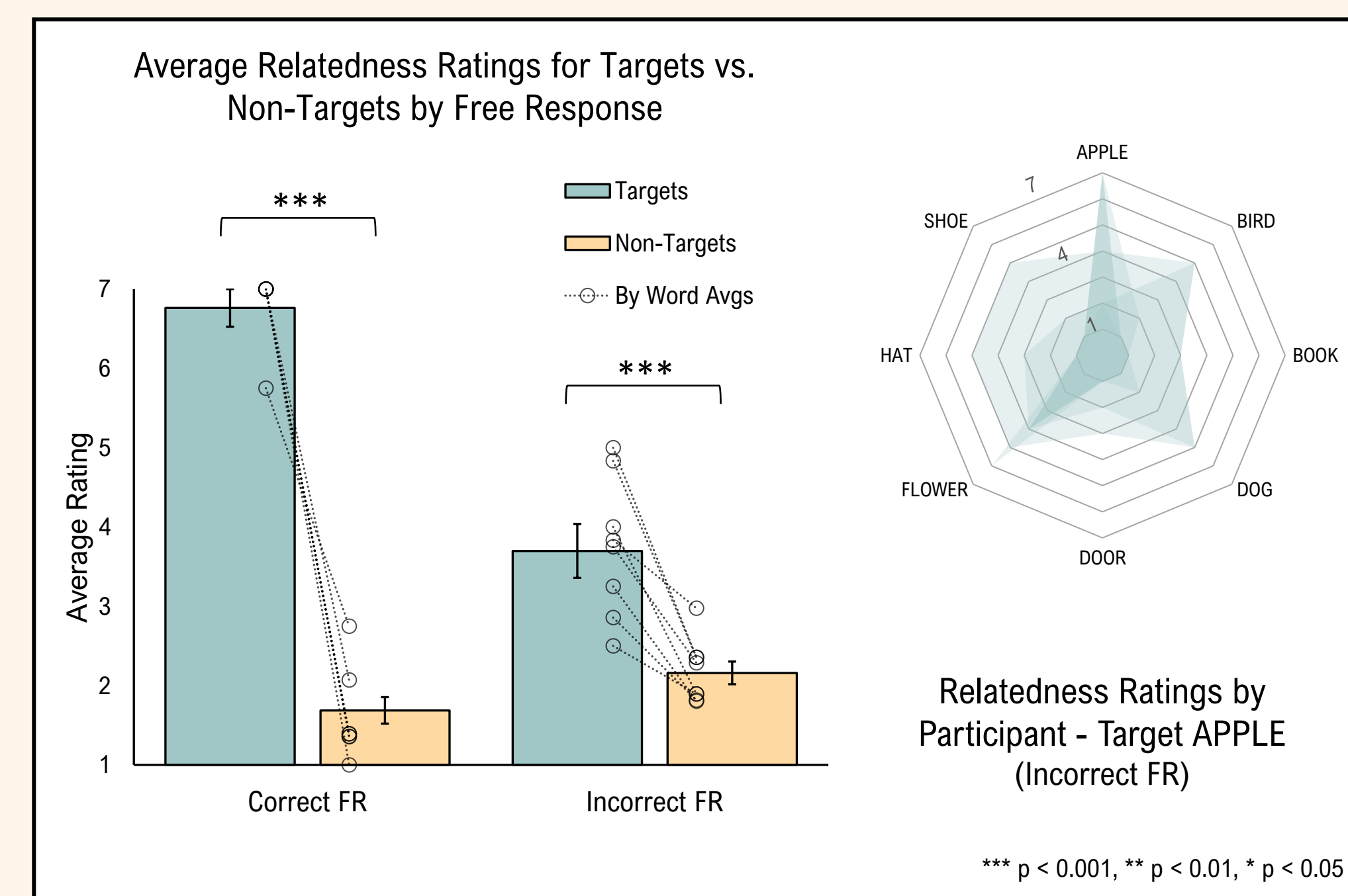
- Performance on the categorization task was above chance, even for those with incorrect free response guesses.

### Semantic Relatedness of FR Errors



- The FR errors which participants gave were semantically related to the target words (as rated by a separate group of participants).

### Semantic Rating Test



- Average ratings were significantly higher for target words than for non-target words, even for those with incorrect free response guesses.

## DISCUSSION

- The role of referentially ambiguous naming events in word learning is a matter of great debate.<sup>4,5</sup>
- The current study modified the HSP to include multiple measures of word learning from referentially ambiguous input.
- Results from error analyses, categorization behavior and semantic ratings of the target word indicate that referentially ambiguous events may yield partial knowledge of the word even when they don't yield full learning.
- Thus, a critical aspect to consider in the debate on word learning from referentially ambiguous input is how word learning is defined.

## Future Directions

### The Nature of Partial Knowledge

- What is the nature of the representation learners form when they don't acquire full knowledge of the word?

### Understanding the Learning Process

- What are the learning processes and mechanisms that shape the partial knowledge observed in the current study?

### Testing Other Word Classes

- How do these partial learning effects extend to verbs and other more abstract words?



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