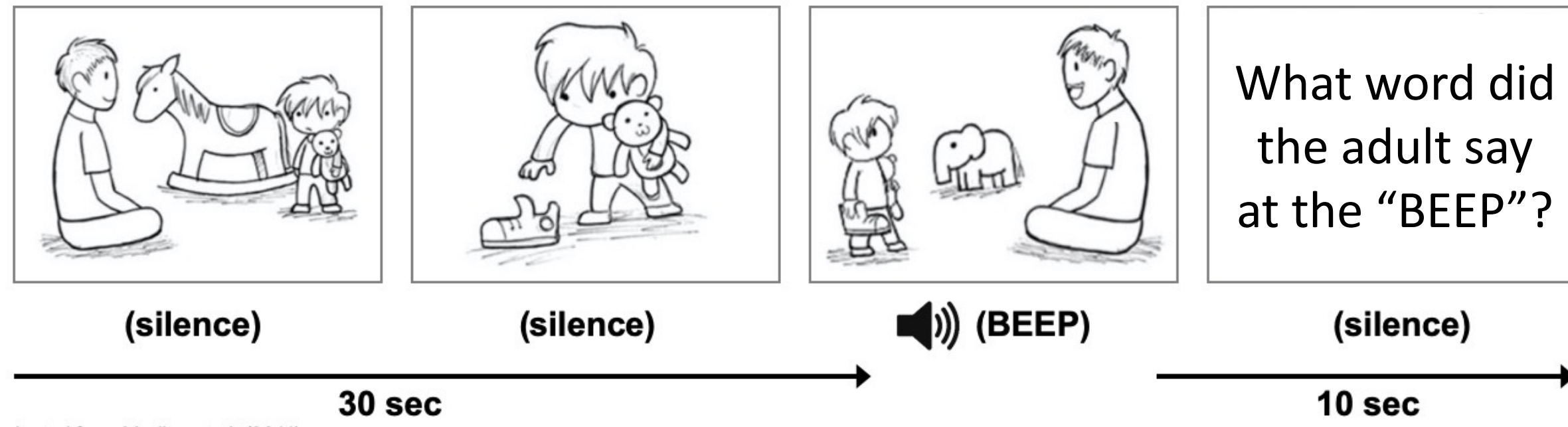


## Background

- Learning words from their observational contexts is a difficult task<sup>1</sup>, especially for words that do not label objects (i.e., “hard words”)<sup>2</sup>
- This difficulty has been demonstrated in multiple studies using the Human Simulation Paradigm (HSP)<sup>3</sup>

### The Human Simulation Paradigm



adapted from Medina et al. (2011)

### Kako (2005)’s Noun Learning Study

	Concrete, ‘easy’ nouns	Abstract, ‘hard’ nouns
Observation	✓	✗
Observation + Linguistic	✓	✓

## Current Project

- Research Goal:** to revisit the role of observational contexts in the acquisition of hard nouns
- In a study that incorporates several different tests of learning, we examined whether learners can acquire systematic partial knowledge about hard nouns from their observational contexts even when they fail to acquire their precise meanings

## Methods

- 120 adults participated in an online study where their task was to learn the meaning of a mystery word (“MODI”) that corresponded to one of 10 English hard nouns: dinner, friend, hand, morning, school, story, tomorrow, toy, water, and wind
- The study consisted of three phases, corresponding to three tests of learning:

### 1. Scene Classification Test

Participants guessed whether the mystery word was originally present on picture book scenes (32 trials)



### 2. Word Identity Test

Participants guessed the identity of the mystery word (1 trial)

Type in the mystery English noun you think “MODI” is

### 3. Semantic Relatedness Test

Participants rated the similarity in meaning of the mystery word to a battery of hard nouns, including the target word (10 trials)

How similar is the meaning of “MODI” to: WIND

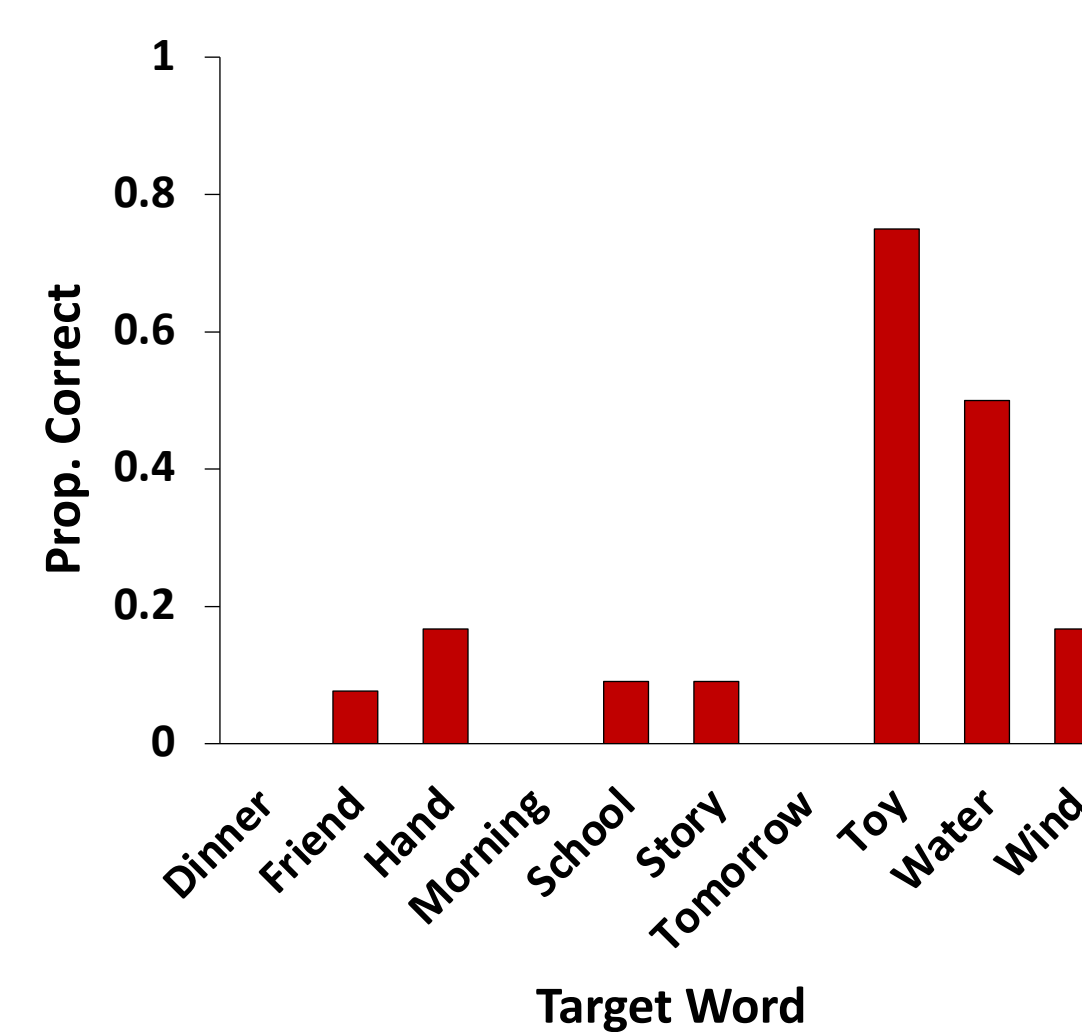
1 Completely unrelated in meaning ... 7 Highly related or identical in meaning

## Results

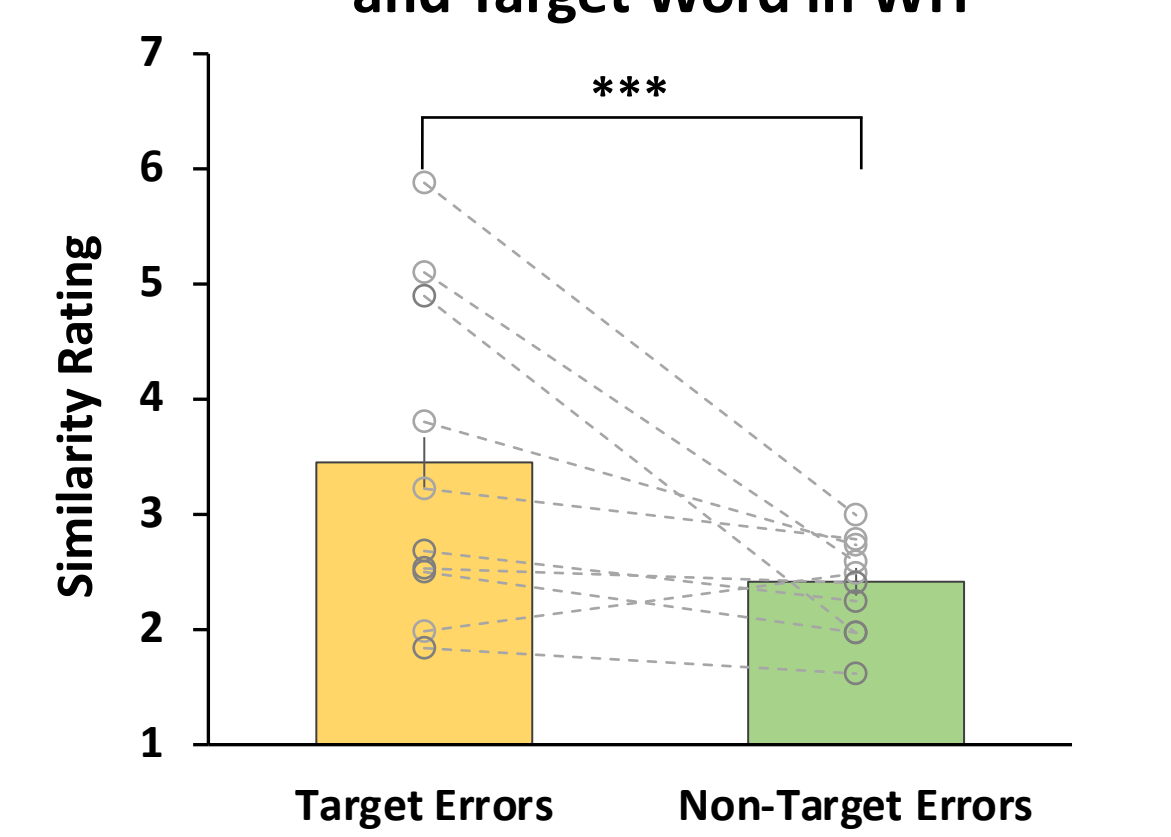
- Most participants failed to guess the mystery word correctly (Fig. A)
- When participants did not learn the precise word, they still:
  - Guessed a word that was semantically related to the target word in the Word Identity Test (Fig. B)
  - Performed significantly better than chance rates throughout the Scene Classification Test (Fig. C-D)
  - Rated the mystery word as more similar to the target noun than to the other nine nouns on the Semantic Relatedness Test (Fig. E-F)

### Word Identity Test (WIT)

#### A Identification Rates in the WIT

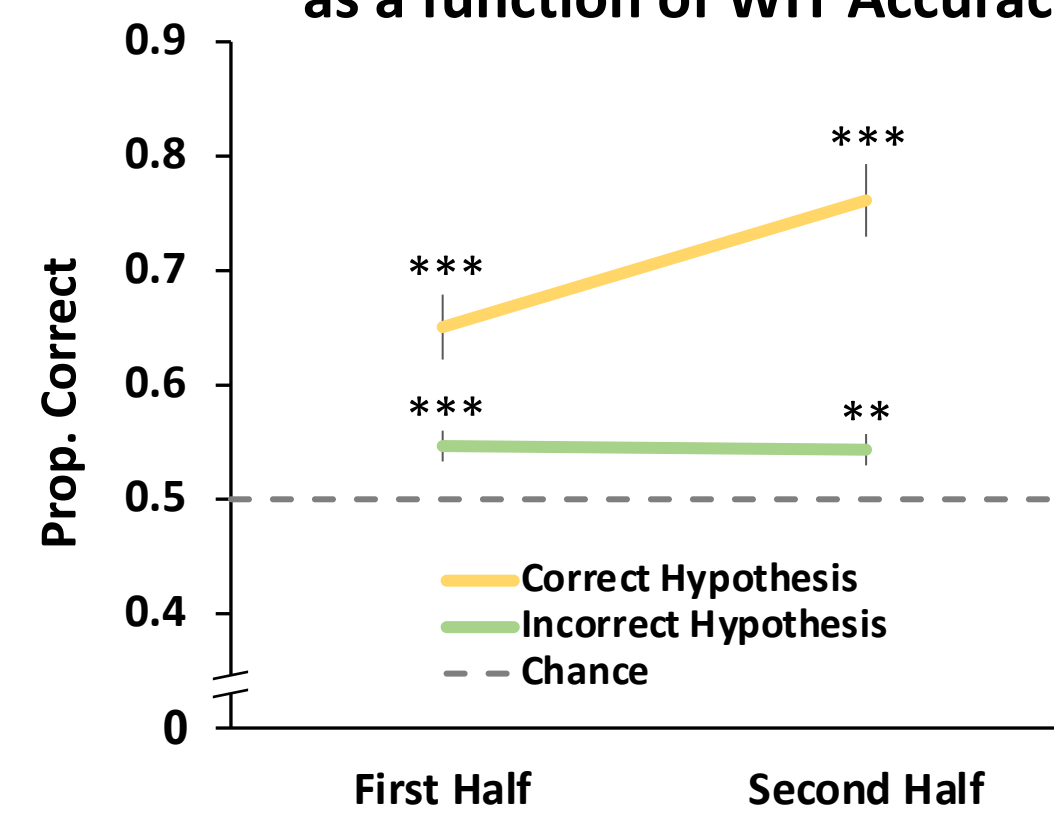


#### B Semantic Similarity between Error and Target Word in WIT

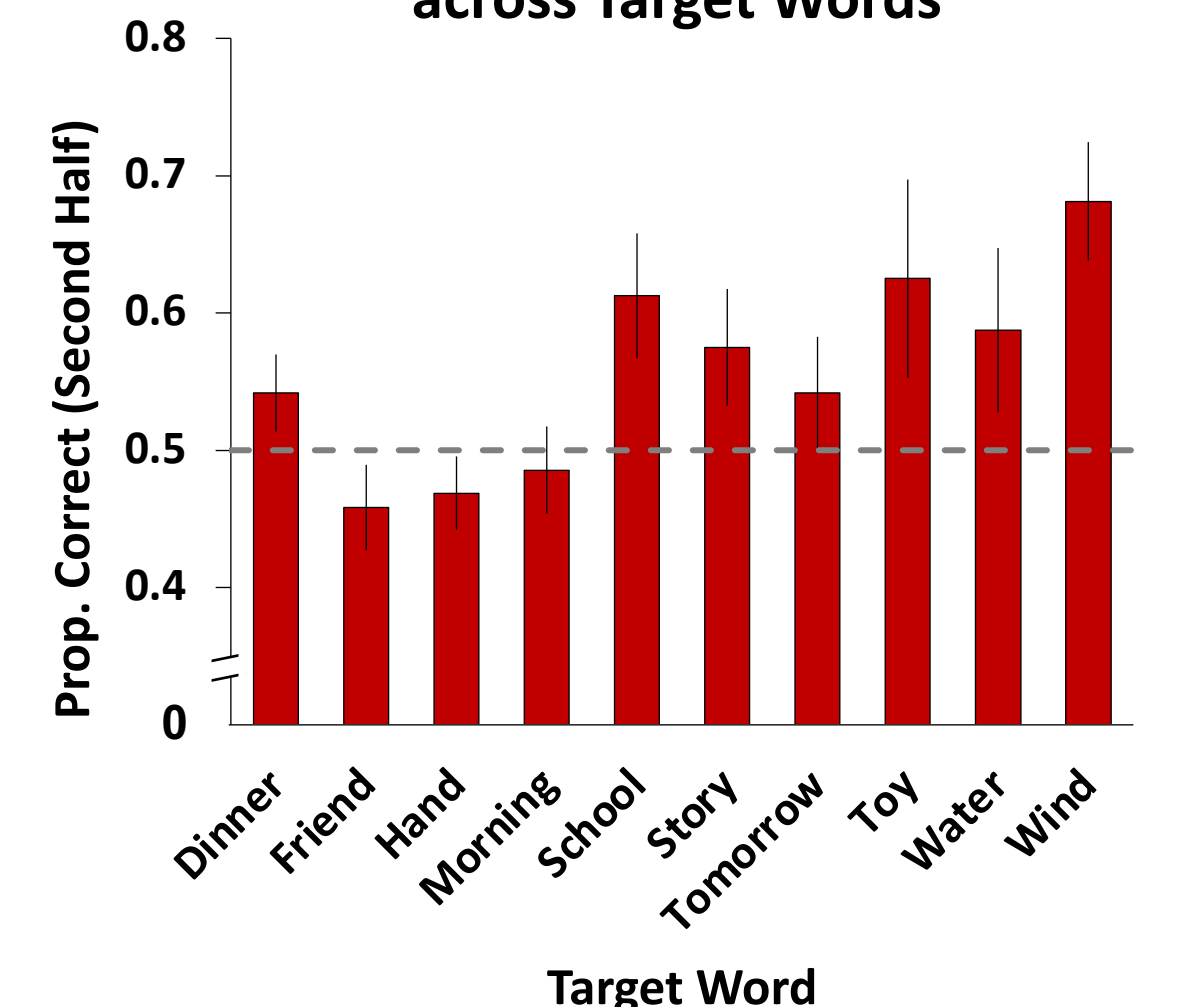


### Scene Classification Test (SCT)

#### C Scene Classification Performance as a function of WIT Accuracy



#### D Scene Classification across Target Words

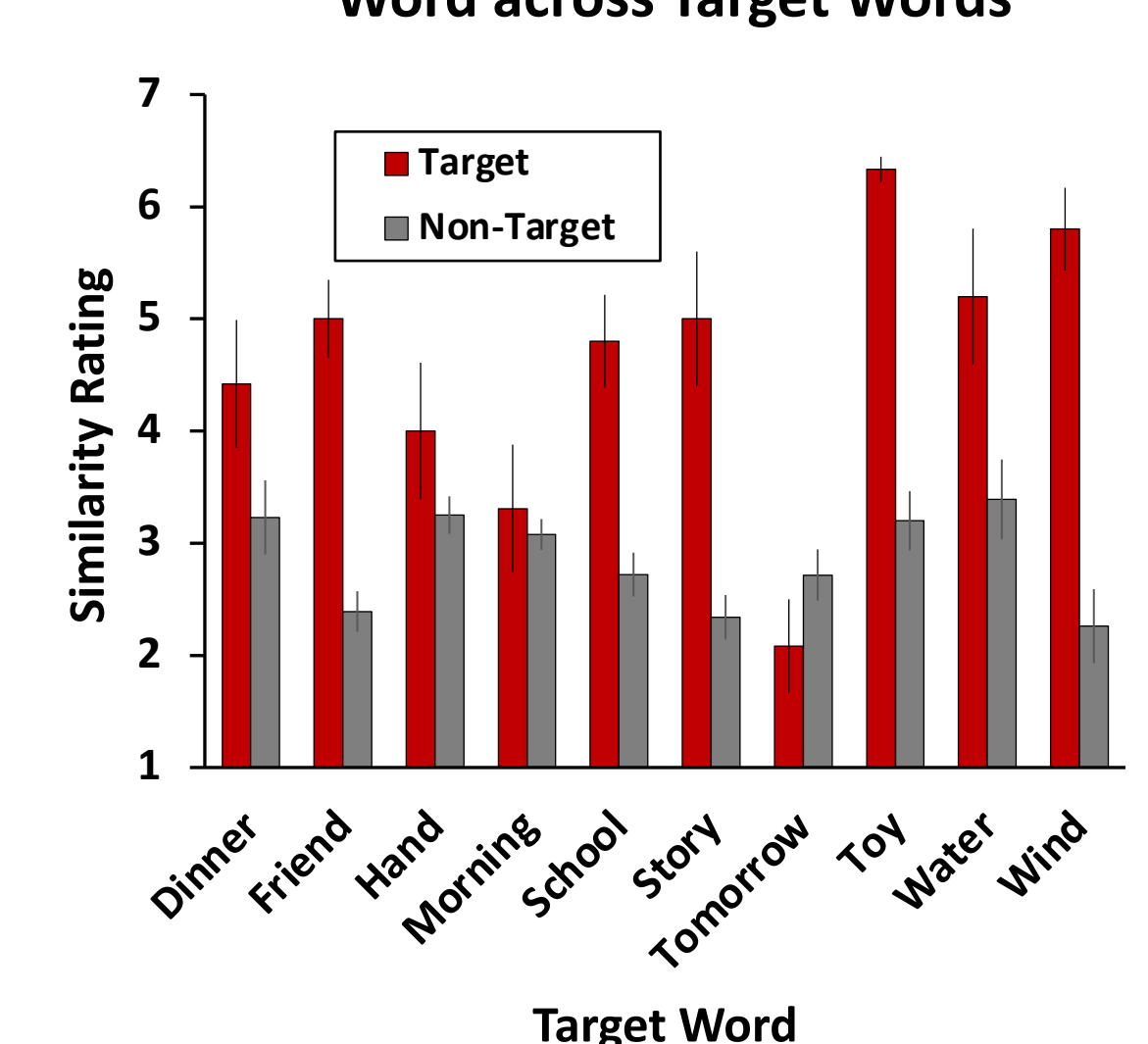


### Semantic Relatedness Test (SRT)

#### E Similarity Ratings to the Mystery Word



#### F Similarity Ratings to the Mystery Word across Target Words



\*\*\*  $p < .001$

\*\*  $p < .01$

## Discussion

- These findings highlight how although observational contexts rarely lead to learning “exact” meanings of hard nouns, they do lead to systematic acquisition of partial meanings of hard nouns
- These partial meanings may lay the foundation for full meaning acquisition upon the incorporation of linguistic information
- More broadly, these findings highlight the importance of how word learning is measured and defined for our understanding of the input to, and mechanisms of, word learning

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