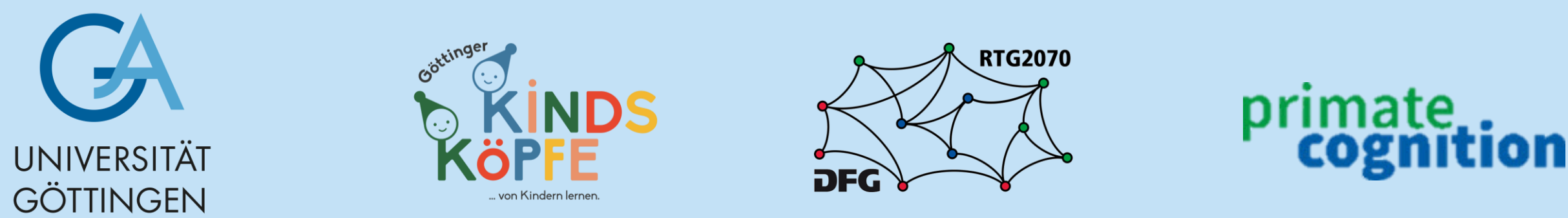


# The role of object novelty in children’s and adults’ disambiguation and retention of novel words

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## BACKGROUND

- The mutual exclusivity (ME) effect*
- Children map novel labels onto novel unnamed objects<sup>1</sup>
  - Theoretically, this can be explained by lexical constraints<sup>2</sup>, pragmatic inferences<sup>3</sup> or **children’s attraction to novelty**<sup>4</sup>
  - Mixed findings as to whether object novelty *alone* robustly guides children’s referent selection

- The relation between disambiguation and word learning*
- Ambiguous pattern of both children’s success<sup>5</sup> and failure<sup>6</sup> in retaining new word-object mappings

## RESEARCH QUESTIONS

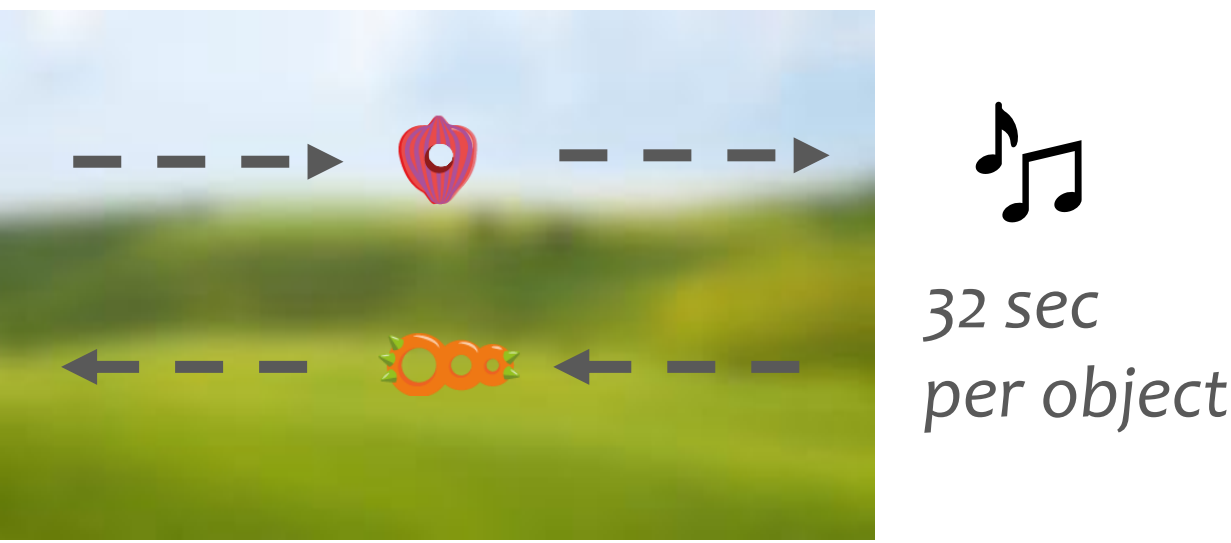
1. Is children’s attraction to object novelty sufficient to explain the ME effect?
2. Under which circumstances does disambiguation lead to word learning?

## METHOD

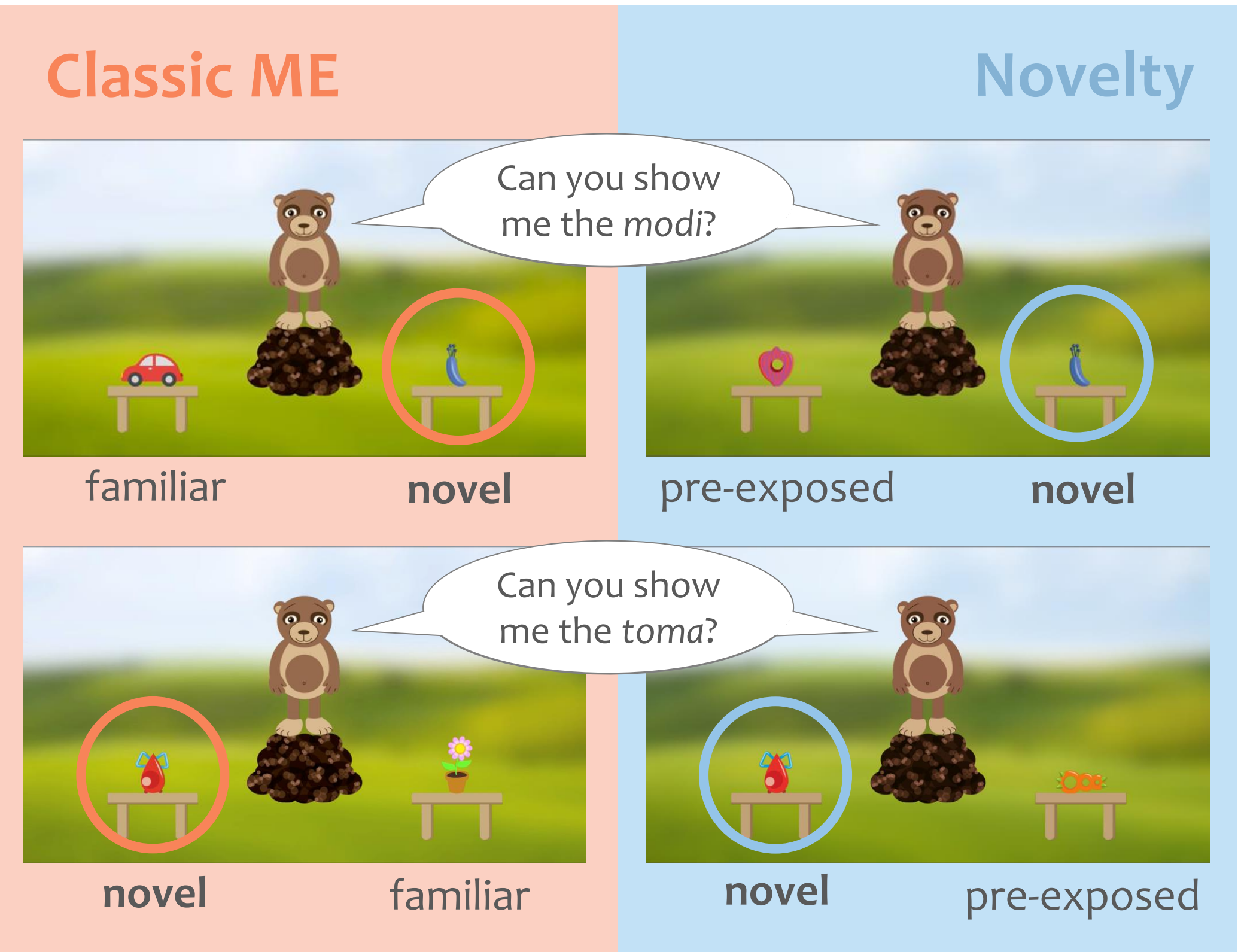
- Online study with **2-and -3-year-olds** (N = 75) & **adults** (N = 112)
- 2 conditions (between-subjects)  
→ **Classic ME** & **Novelty**



### Pre-exposure

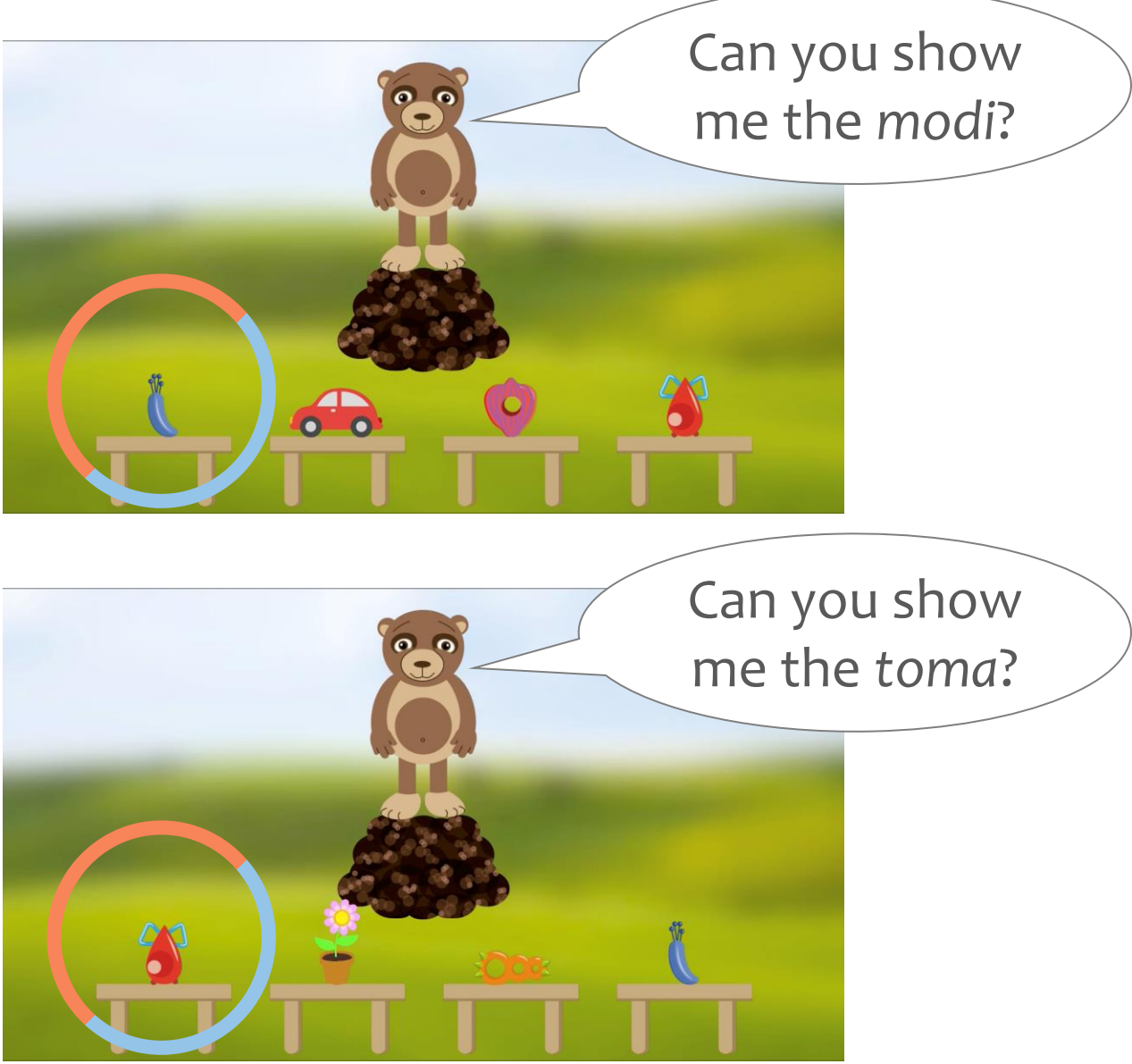


### Referent selection (2 trials)



Break (5 min)

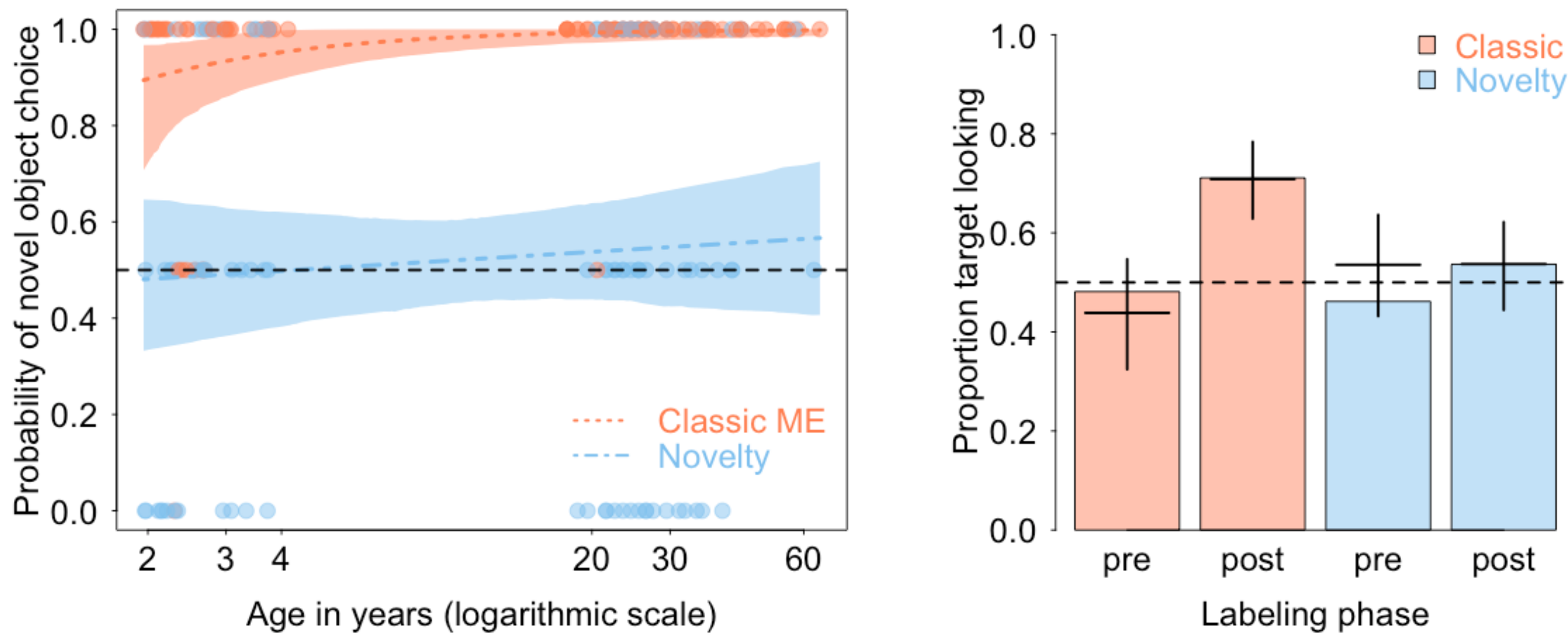
### Retention (2 trials)



Click to watch the videos

## RESULTS

### 1) Disambiguation



#### Uncertainty:

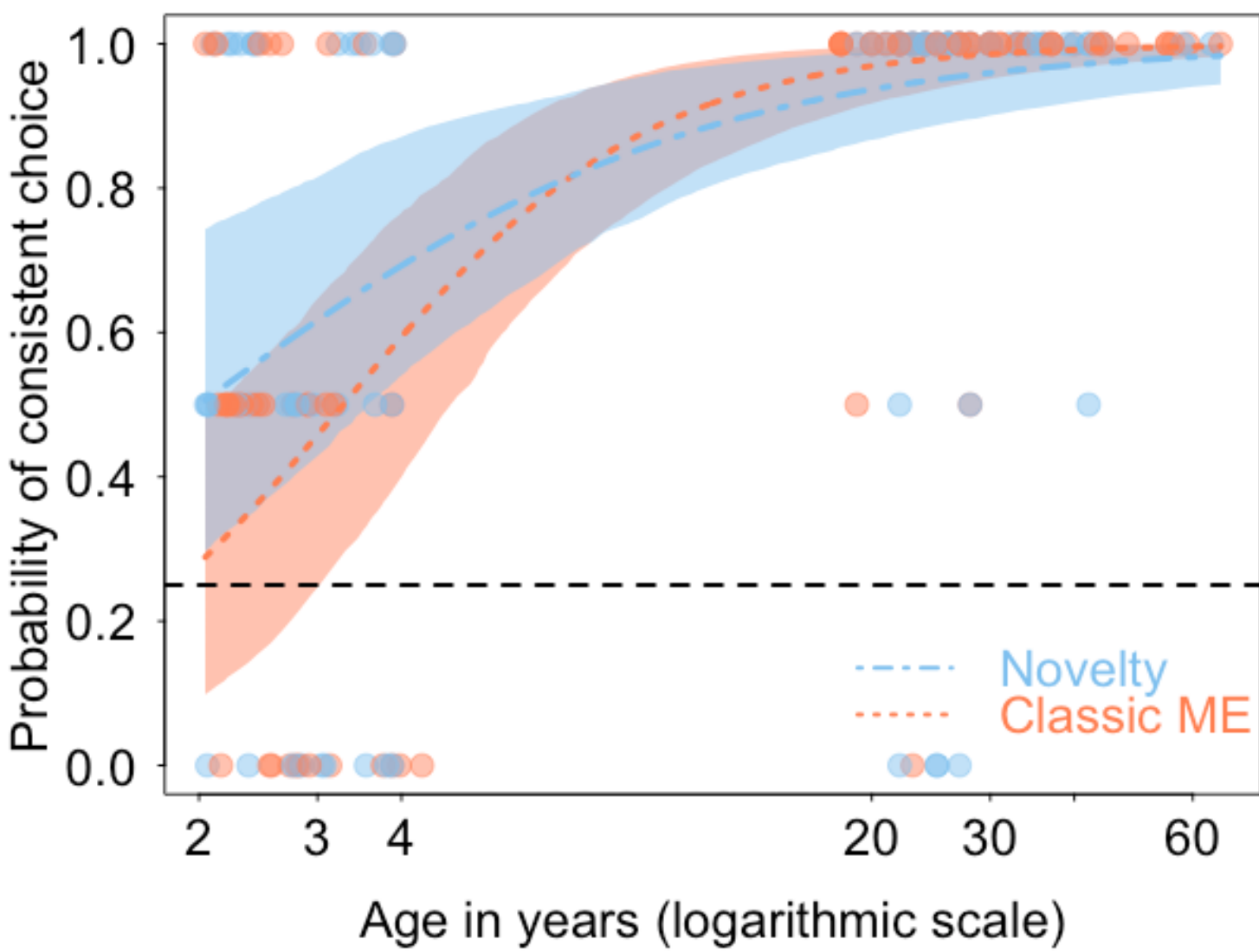
- ✓ Adults: slower responses in the **Novelty** than the **Classic ME** condition ( $b = 0.47$ ;  $p = .004$ )
- ✗ Children: no difference in response times ( $b = 0.01$ ;  $p = .932$ ) or social referencing ( $b = 0.14$ ;  $p = .937$ )

#### Adults’ reported strategies:

- **Classic ME**: 86% based on object nameability / familiarity
- **Novelty**: 51% explicit guessing, 28% based on perceptual features, 15% based on experimental logic
- **Reasoning by exclusion**: 89% in **Classic ME** vs. 3% in **Novelty**

### 2) Retention

- Children only chose consistently in the **Novelty** condition, not in the **Classic ME** condition
- Adults chose consistently in both conditions



## DISCUSSION

- In the classic ME task including lexical, pragmatic and novelty cues, children and adults select a novel object as the correct referent of a novel word
- After controlling for lexical and pragmatic information, **relative object novelty alone did not guide their disambiguation**
- Children’s looking patterns mirrored their behavioral responses
- *An interplay of factors may determine under which circumstances novelty attracts their attention and drives their referent selection*
- After 5 min, children retained their selections in the Novelty condition, but **confused specific labels in the Classic ME condition** (despite easily mapping them in disambiguation trials)
- *Does the ease of the classic ME task lead to reduced engagement and superficial encoding of the scene?*

Children’s attraction to object novelty was not sufficient to explain the mutual exclusivity effect & guide their disambiguation



[1] Lewis, M., Cristiano, V., Lake, B. M., Kwan, T., & Frank, M. C. (2020). The role of developmental change and linguistic experience in the mutual exclusivity effect. *Cognition*, 198, 104191. [2] Markman, E. M., & Wachtel, G. F. (1988). Children’s use of mutual exclusivity to constrain the meanings of words. *Cognitive Psychology*, 20(2), 121–157. [3] Diesendruck, G., & Markson, L. (2001). Children’s avoidance of lexical overlap: A pragmatic account. *Developmental Psychology*, 37(5), 630–641. [4] Mather, E., & Plunkett, K. (2012). The role of novelty in early word learning. *Cognitive Science*, 36(7), 1157–1177. [5] Spiegel, C., & Halberda, J. (2011). Rapid fast-mapping abilities in 2-year-olds. *Journal of Experimental Child Psychology*, 109(1), 132–140. [6] Horst, J. S., & Samuelson, L. K. (2008). Fast mapping but poor retention by 24-month-old infants. *Infancy*, 13(2), 128–157.