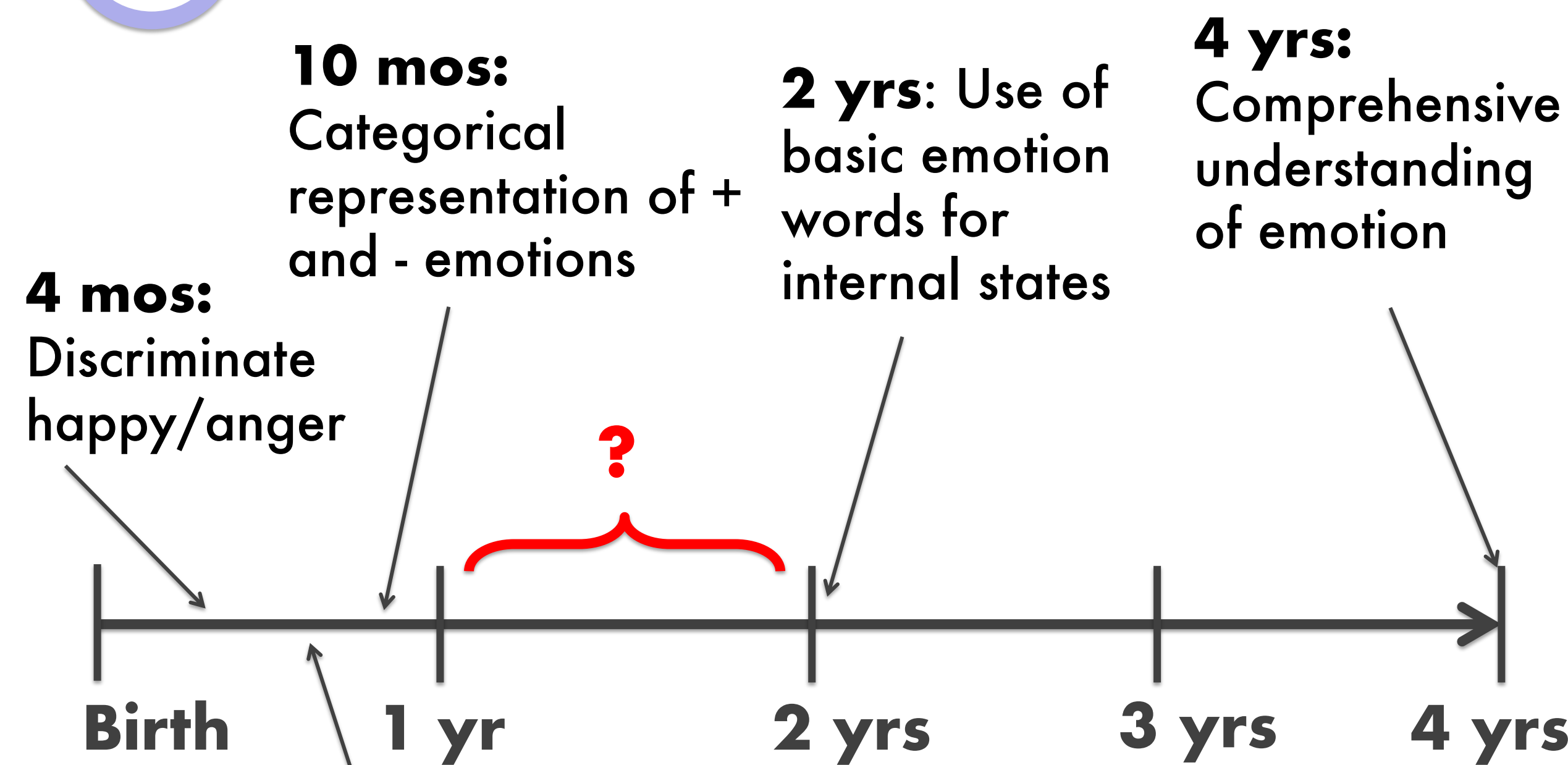
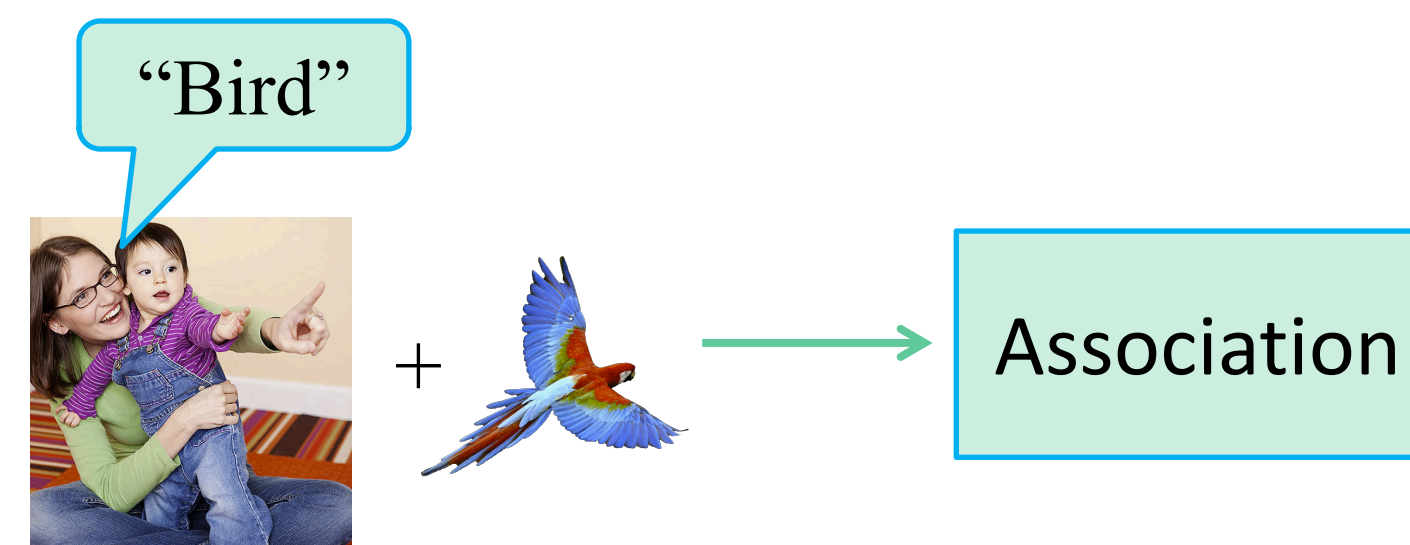


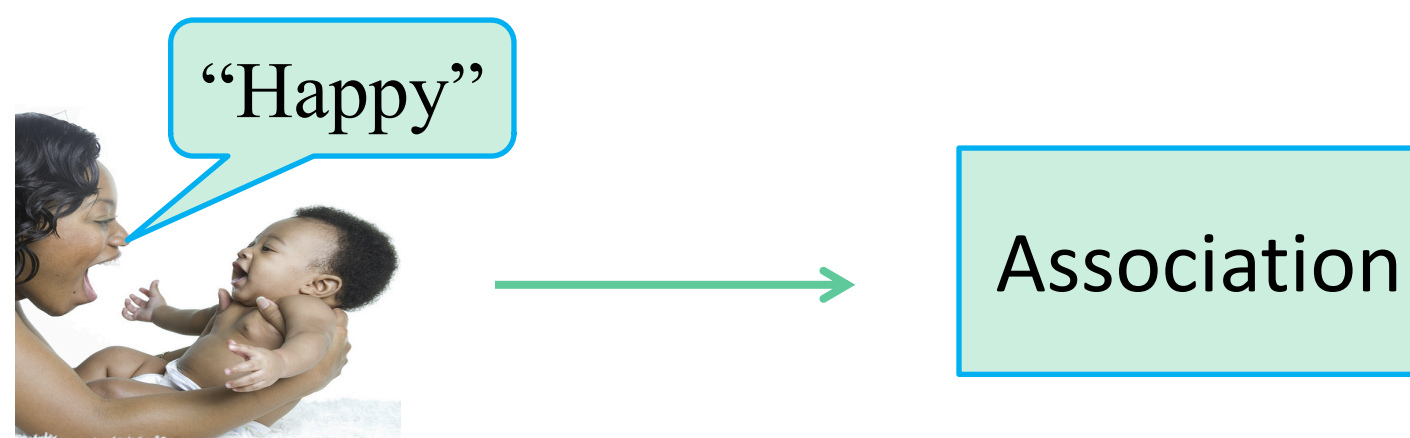
1 Introduction



Learning Nouns: TRIADIC Interaction



Learning Emotion Words: DYADIC Interaction



- Emotions → internal, invisible states
- More difficult than learning visible object words¹
- No physical referent for mapping labels onto emotions
- Facial expressions = external expressions of emotion

2 Previous Research

Wilbourn, Ruba, and Harris, 2011 (in prep)

- Audio of emotion words + human faces & cartoon faces
- Faces made happy and sad expressions

• **14-month olds:**

- Learn emotion words w/ cartoon faces
- Do not learn emotion words with human faces
- Words presented as a *voiceover*

Human Faces		Cartoon Faces	
Event 1	Event 2	Event 1	Event 2
Sad- "Toma"	Happy- "Bliket"	Sad- "Toma"	Happy- "Bliket"

3 Study Purpose

- Babies are able to learn when they can recruit the right skills
- When the sound is a voiceover → can't recruit social word-learning skills needed
- Ecological validity → emotion learning = dyadic interaction
- In the real world, infants **expect** to see faces *emitting* words → this is how babies *actually learn* emotions

4 Research Questions

1. Do 14-month old infants recruit unique cues for learning emotion labels?
2. Do naturalistic cues (e.g., labels emitted *from* a face) help infants learn emotion labels?

5 Study Design

- Babies look at novel referents longer than familiar ones²
- "Habituate" to visuals they have learned after seeing many times²
- Create stimuli with a *switched design*

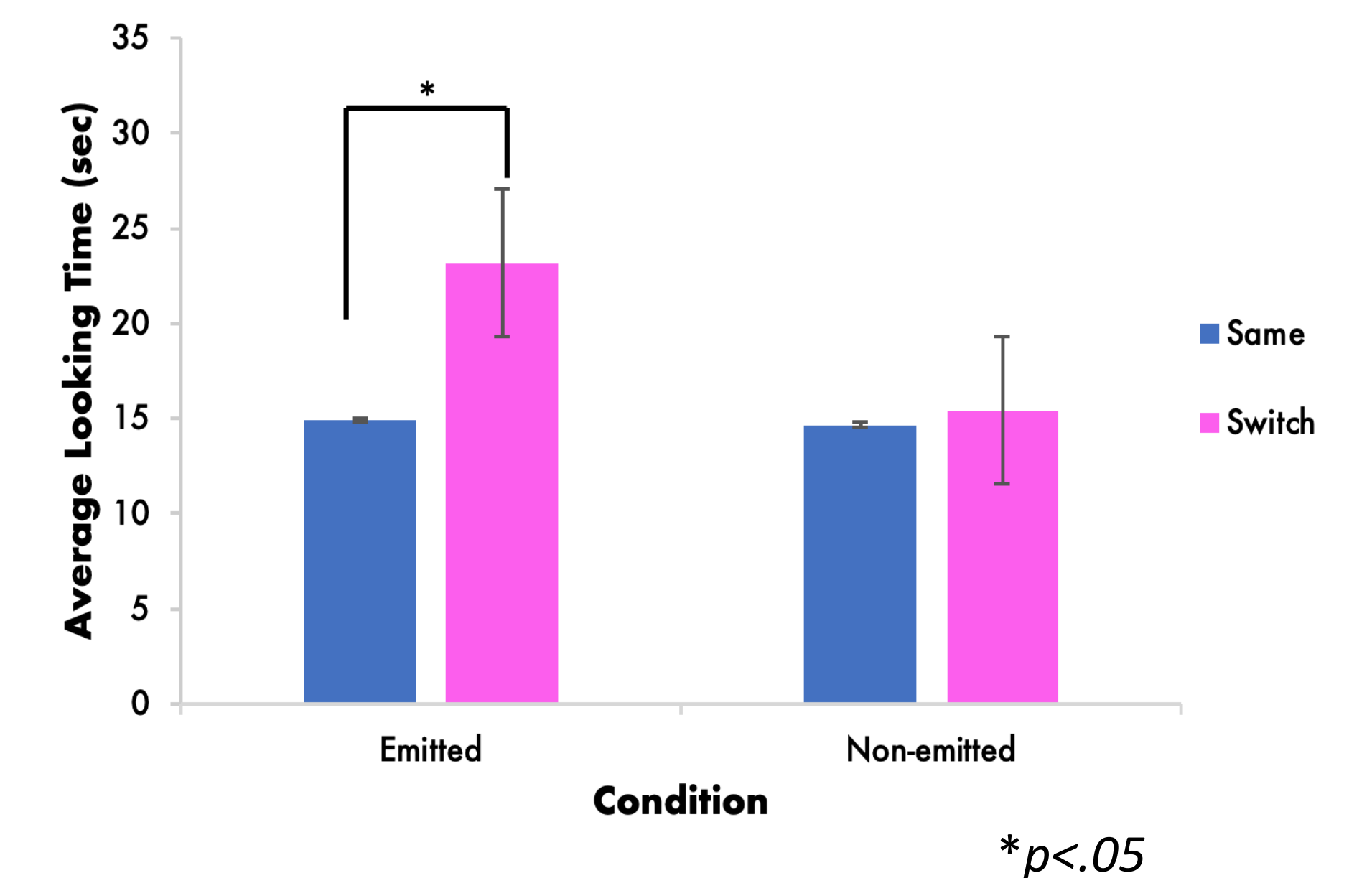
Habituation Trials		Test Trials		
Event 1	Event 2	Same Event	Switch Event	Post Event
"Blicket"	"Toma"	"Blicket"	"Blicket"	"Auk"

- Look at looking times for 14-month olds
 - Emitted vs. Non-Emitted

6 Methods

- **Subjects:** 13-15-month-olds (n=32) (M=13.7 mos)
- **Procedure:** *Switched design*: Babies are habituated to video of label-expression combinations and then tested with one combination from the habituation phase and one with changed relations

7 Results



	Discriminator	Non-discriminator	Total
Emitted	14	2	16
Non-emitted	4	12	16

$$\chi^2(1, N = 32) = 12.698, p < .001$$

8 Discussion

- Only babies in the **emitted** condition were able to discriminate between the same and switch conditions
- Labels emitted from a face facilitated word learning
- Babies are able to learn when they can recruit the right skills
- Emotion learning requires specific facial cues

Future Directions

- When are faces considered "human"?
- What about realistic/computer-generated cartoons?

9 References

1. Kotsoni, E., De Haan, M., & Johnson, M. H. (2001). Categorical perception of facial expressions by 7-month-old infants. *Perception*.
2. Oakes, L. M. (2010). Using Habituation of Looking Time to Assess Mental Processes in Infancy. *Journal of Cognition and Development: Official Journal of the Cognitive Development Society*, 11(3), 255–268. <https://doi.org/10.1080/15248371003699977>
3. Ruba, A. L., Johnson, K. M., Harris, L. T., & Wilbourn, M. P. (2017). Developmental changes in infants' categorization of anger and disgust facial expressions. *Developmental Psychology*, 53(10), 1826–1832. <https://doi.org/10.1037/dev0000381>
4. Swingle, D. (2010). Fast Mapping and Slow Mapping in Children's Word Learning Children's Word Learning SWINGLEY. *Language Learning and Development*, 6(3), 179–183.