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Introduction

Word learning: new **object** + verbal **label**;
 often accompanied by **actions** (e.g., Matatyaho-Bullaro et al., 2014)

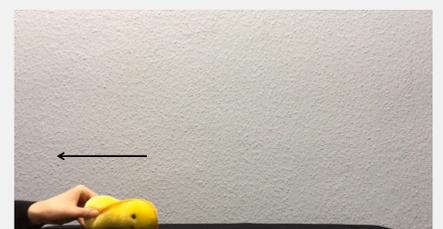
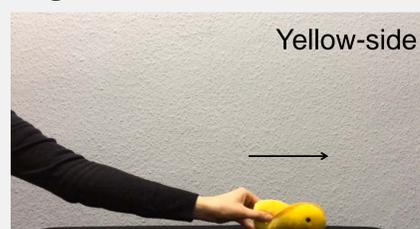
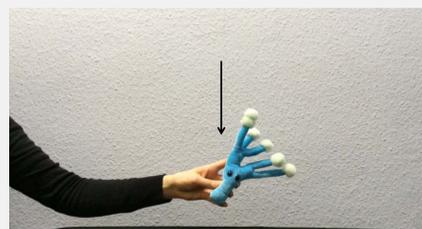
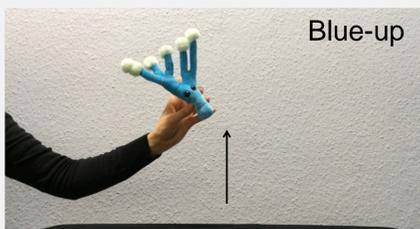
Action learning (e.g., tool use): new **object** + **action**;
 often accompanied by **words** (e.g., Elsner & Pfeifer, 2012)

How does information from one domain (speech/action) influence processing of information in the other domain?

1. How does verbal information during demonstration influence the action imitation of infants?
2. Do infants prefer to associate objects with words or actions? And how does it relate to later language development?

Method

Stimuli & Design



Two objects:
 Blue
 Yellow

Two actions:
 Upwards
 Sideways

Four object-action- pairings:
 Blue-up / Blue-side
 Yellow-up / Yellow-side

Study 1 (DV: Imitation)

Noun-Condition

“Look, a Tanu/Löki!”

Noun & Verb-Condition

“Look, I dax/neem the Tanu/Löki!”

Verb-Condition

“Look, I dax/neem!”

Control-Condition

“Look, what I am doing!”

Pilot with action-presentation on eyetracker vs. live-demonstration

Study 2 (DV: Gaze Behavior)

Training: 8 trials of word-action-object triads

Test: Word-object vs action-object associations

Vocabulary Assessment: Elfra-1

Cognitive / Motor Development: Bayley Scale

Retention after one week

18-month-olds

N = 8 toddlers
 N = 7 **video** demonstrations
 N = 1 **live** demonstration

Object-action-pairing:
 Noun & Verb > Control
 Noun & Verb = Noun / Verb

24-month-olds

N = 5 toddlers
 N = 2 **video** demonstrations
 N = 3 **live** demonstrations

Object-action-pairing:
 Noun & Verb > Control
 Noun & Verb > Noun / Verb

12-month-olds

N = 11

Word-object > action-object
 18-month-olds > 12-month-olds
 Correlation between vocab/action knowledge and performance?

Results & Discussion

Study 1:

- None of the toddlers produced any of the actions
- Problem might be inherent to the actions themselves

Study 2:

- 12-month-olds show recognition only for word-object associations
- 18-month-olds? Retention? Correlation? Still to be analysed...

Discussion:

- Action-object association might not be strong in either of the studies
- Words as arbitrary sounds = arbitrary actions?
- Words + reference = goal-oriented actions?

Next steps:

- Adding a bell to the toys to elicit a sound effect during demonstration
- Using multi-step actions with a clear action-goal + action-effect
- Using highly familiar words instead of pseudo words
- Influence of action demonstration on word-object association

References

Elsner, B., & Pfeifer, C. (2012). Movement or goal: Goal salience and verbal cues affect preschoolers' imitation of action components. *Journal of experimental child psychology*, 112(3), 283-295.
 Matatyaho-Bullaro, D. J., Gogate, L., Mason, Z., Cadavid, S., & Abdel-Mottaleb, M. (2014). Type of object motion facilitates word mapping by preverbal infants. *Journal of Experimental Child Psychology*, 118, 27–40.

