Christian Kliesch[1], Stefanie Hoehl[2,3], Vincent Reid[1], Eugenio Parise[1]

[1] Lancaster University, [2] University of Vienna, [3] Max Planck Institute for Human Cognitive and Brain Sciences

The role of communicative signals in segmenting actions

INTRODUCTION

Communicative signals, such as direct gaze and child-directed-speech are important sources for children to learn from. In the current study we are particularly interested in whether communicative signals can help 18-month-old children to segment actions and whether the position of communicative signals predicts which parts of an action children imitate.

METHODS

We adapted the methodology by Carpenter et al. (2005) and Southgate et al. (2009) in which an experimenter shows how an animal is hopping or sliding into a house. In our study, children were addressed either after the hopping/sliding action or after the animal was put into the house. We hypothesised that 18mo would be more likely to imitate the manner if they had been addressed between the two actions. Preregistration on aspredicted, #5771. We tested two groups of 20 18m-olds in a between-subjects design.

RESULTS

Model vs.	χ^2(df)	Bayes Factor
Marked	Null	χ^2(1) = 0.99, p = .32	0.14
Action×Marked	Null	χ^2(3) = 9.27, p = .02	0.057
Action×Marked	Marked	χ^2(2) = 8.28, p = .016	0.42
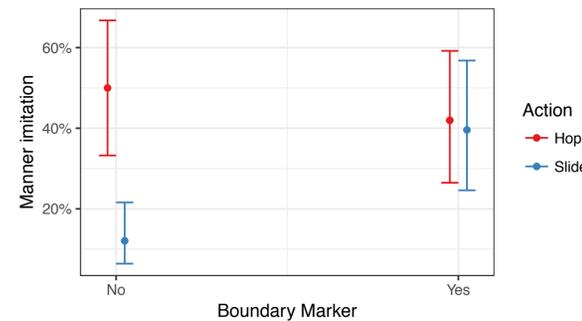
Sliding
β = 1.55, SE = 0.65, p = 0.017
Unmarked: 12% (95% CI: 5–27%)
Marked: 40% (95% CI: 24–57%)

Hopping
β = −0.36, SE = 0.56, p = 0.52
50% (95% CI: 33–67%)
42% (95% CI: 27–59%)

Outcome
Imitation of outcome was at ceiling, with 99.9%.

DISCUSSION

Our hypothesis was only confirmed for the sliding action, but not the hopping action. It is likely that hopping is a salient action on its own, and receives high imitation either because it provides segmentation information on its own, is more repetitive, easier to be identified as intentional or is simply more fun.

However, sliding is less salient on its own. Children may perceive sliding as purely instrumental, unless it is marked as a separate action by the model.

OPEN QUESTIONS

- How does it generalise to other actions?
- Are social signals better than non-social cues or a plain pause?

Condition 2 (Unmarked): "Wow!"
After putting animal into house

Condition 1 (Marked): "Wow!"
After hopping/sliding action and before putting animal into house

"Hey, I'm going to show you what the squirrel does! Wow!"
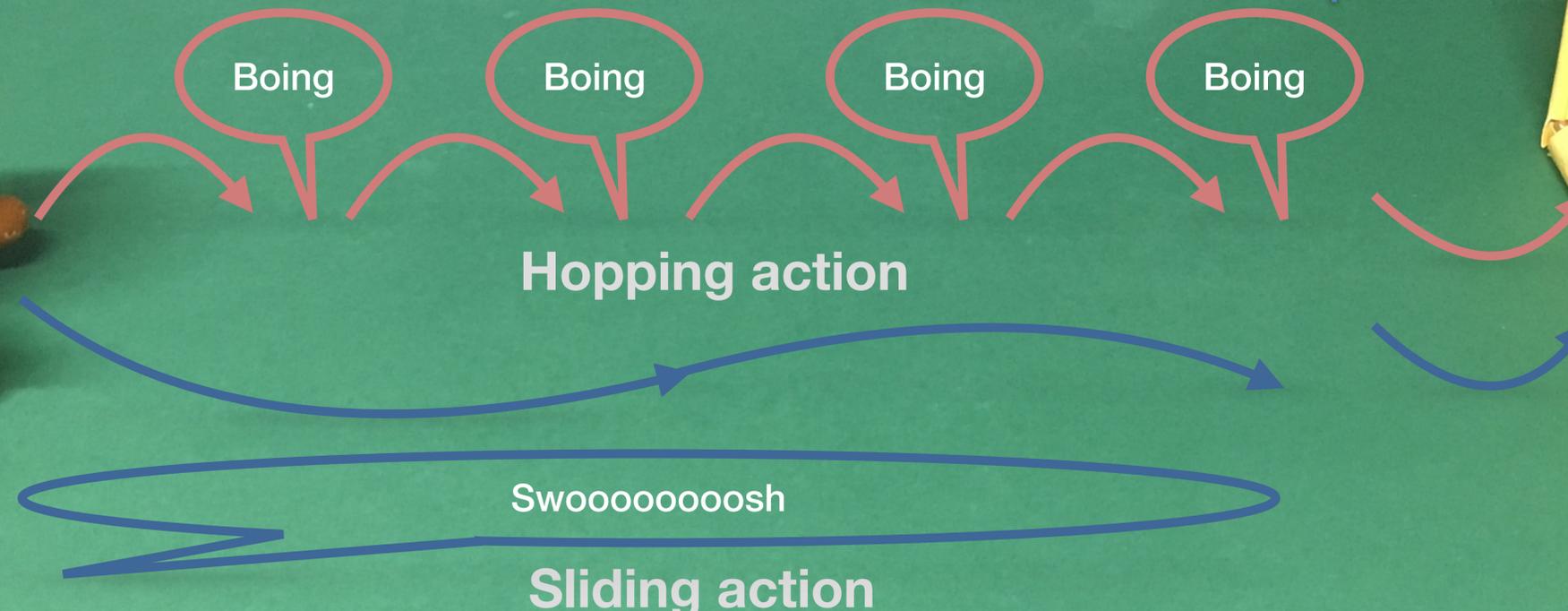
"Did you see that? The animal went into the house!"

Boing   Boing   Boing   Boing

Hopping action

Swoooooooosh

Sliding action