GEORG-AUGUST-UNIVERSITÄT GÖTTINGEN IN PUBLICA COMMODA SEIT 1737

DPZ

A1

The developmental interplay of curiosity, metacognition and social learning

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Motivation

- Young children are curious individual learners
- In interactions, children are also swift social learners
- Yet little is known about the developmental interplay of curiosity and *social* learning
- We will address this question in free-ranging and captive Guinea baboons

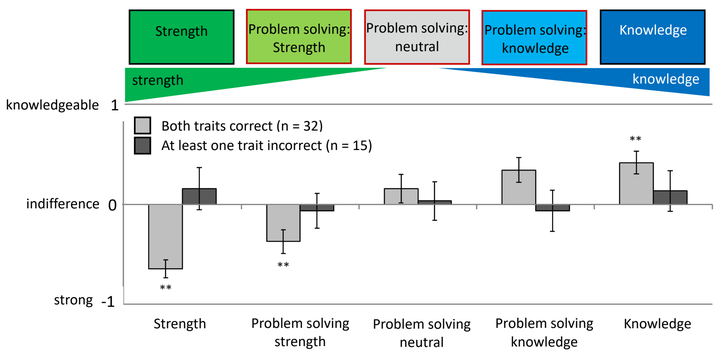

Fig.1: Faced with the choice between a previously accurate and a previously strong model, children choose in selective and competent ways. This selectivity is closely related to a child's capacity to ascribe the relevant traits to the models.

Preliminary work:

- Children selectively learn from others[1]
- Early social learning is cognitively sophisticated[2]

Objectives

- Curiosity is a multifaceted phenomenon; it can range from a basic drive for information to an explicit metacognitive attitude (wanting to know)
- Our objective is to delineate the development of these different forms of curiosity

➢ In investigating developmental trajectories of different forms of curiosity, this project speaks to the question **When are we curious?**

➢ In examining proximate factors that favour curious social learning in early childhood, this project also asks **Why are we curious?**

?

Is curiosity-driven learning boosted in social learning situations relative to individual exploration?

Methods

- Children between the ages of 1 and 5 will be tested in *individual* and *social* learning situations
- Children will be able to freely explore and allocate learning resources to gather new information about a given domain (novel tools, toys etc.).
- We will measure implicit metacognition (e.g., information seeking) and explicit metacognition (e.g., verbal expressions of certainty/uncertainty, expressions of curiosity, and learning success)

Hypotheses[3, 4]:

- All children will exhibit some implicit metacognition, curiosity, and a level of learning success in individual- and social learning situations
- Relative to individual learning situations, social (collaborative) learning situations will boost explicit metacognition and curiosity, leading to more pronounced learning success.
- Since the capacity for explicit metacognition develops in protracted ways over the preschool years, the difference between social and individual learning situations will become more pronounced over development.

Fig.2: Study setup of a prototypical social learning experiment

Cross-project collaborations

- Strong **conceptual link** with **A3** via shared interest in Theory of mind and metacognition. Doctoral researchers in **A1** and **A3** will team up and work together on their projects.
- Key collaborations with projects that investigate the **cognitive and developmental foundations of curiosity** – **A2**, **A3**, **B2**, **B3**, **B4**.
- This project combines **proximate and ultimate questions**, as do projects **A2**, **A3**, **B2**.

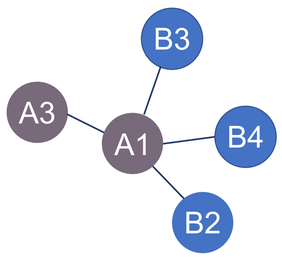

Fig. 3: Some of the key collaboration partners of doctoral researcher working on Project A1

Potential PhD projects

1. Developmental relations between metacognition, curiosity and exploratory play.
2. The role of metacognition and curiosity in the development of logical reasoning.
3. Comparative and developmental perspectives on different forms of metacognition and curiosity.

References

1. Hermes, J., Behne, T., & **Rakoczy, H.** (2015). The role of trait reasoning in young children's selective trust. *Developmental Psychology*, 51(11), 1574-1587.
2. Hermes, J., Behne, T., Bich, A. E., Thielert, C., & **Rakoczy, H.** (2018). Children's selective trust decisions: Rational competence and limiting performance factors. *Developmental Science*, 21(2), e12527.
3. Heyes, C., Bang, D., Shea, N., Frith, C. D., & Fleming, S. M. (2020). Knowing ourselves together: The cultural origins of metacognition. *Trends in Cognitive Sciences*, 24(5), 349-362.
4. Shea, N., Boldt, A., Bang, D., Yeung, N., Heyes, C., & Frith, C. D. (2014). Supra-personal cognitive control and metacognition. *Trends in Cognitive Sciences*, 18(4), 186-193.