Changes in Knowledge Across Time

Parsons, K., Rigg, V., Boudreau, D., Doucet, E., Toutounji, L., Hamwi, L., & Kamawar, D.

Introduction

- Understanding that our knowledge changes over time (i.e., changes in intraindividual knowledge) is an important ability for children's developing memory, language skills, and communicative abilities (Caza et al., 2016)
- Further, these skills are important for epistemic memory development and gaining expertise in a domain (Fitneva, 2020)
- The goal of the present study is to examine preschoolers' understanding of their own knowledge and how it changes over time

Previous Research

- Preschool-aged children perform above chance when asked about current knowledge (Atance & Caza, 2018; Caza et al., 2016)
- Previous research has shown that only children older than 5 years of age performed above chance when asked about past, future, or intraindividual knowledge (Atance & Caza, 2018; Caza et al., 2016)
- However, we do not currently understand how past and future knowledge are related to one another
- Recent research suggests that preschool aged children are more successful when reasoning about past preferences compared to future preferences, but little is known regarding past and future knowledge
- We expect that children who are good at understanding their own knowledge states (e.g., metacognition: awareness of our own knowledge or lack of knowledge; Rohwer et al., 2012) will be better at understanding their past and future knowledge

Goals

- To determine if awareness of past and future knowledge is related
- To determine if young children's metacognitive abilities are related to their awareness that knowledge changes across time

Hypotheses

1. Performance on Past Self Knowledge questions will be related to performance on Future Self Knowledge questions
2. Metacognition will be related to accuracy on Past Self Knowledge and Future Self Knowledge Questions
3. There will be an effect of age for all measures

Method

Participants

- Four- and five-year-old children are being recruited via online resources (e.g., Facebook, ChildrenHelpingScience.com, word of mouth)

Procedure

- We are meeting with participants online over Zoom for approximately 30 minutes

Tasks

Past Self Knowledge

- Children are asked what they know now and what they knew as a baby
- E.g., "when you were a baby, did you know that a toothbrush is used to brush teeth?" (Caza et al., 2016)

Future Self Knowledge

- Children are asked what they know now and what they will know as an adult
- E.g., "when you are all grown up, will you know what all the words on a newspaper mean?" (Atance & Caza, 2018)

Tasks continued

Metacognition

- This task assesses whether children can reflect on their own current knowledge state

Fitneva Task

- This task assesses whether children are aware that knowledge can be lost over time

Challenges of Online Data Collection

- Privacy regarding online data collection is an important consideration
- Online recruitment requires extensive networking and marketing efforts
- Engaging young children over video can be challenging

Benefits of Online Data Collection

- More flexibility and opportunities for scheduling compared to data collected in a daycare setting or having parents come to the lab
- Easy to record and verify child's responses to questions after the testing session is complete

References

- Atance, C.M. & Caza, J.S. (2018). "Will I Know More in the Future than I Know Now?" Preschoolers' Judgments about Changes in General Knowledge. *Developmental Psychology*, 54, 857-865. <http://10.1037/dev0000480>
- Caza, J.S., Atance, C.M., & Bernstein, D.M. (2016). Older (but not younger) preschoolers understand that knowledge differs between people and across time. *British Journal of Developmental Psychology*, 34, 313-324. <http://10.1111/bjdp.12130>
- Fitneva, S.A. (2020). Children's epistemic forecasting: The case of knowledge loss. *Journal of Experimental Child Psychology*, 199, 1-24. <https://doi.org/10.1016/j.jecp.2020.104926>
- Kopp, L., Hamwi, L., & Atance, C.M. (2021). Self-projection in early development: Preschoolers' reasoning about changes in their future and past preferences. *Journal of Cognition and Development*, <http://10.1080/15248372.2021.1874954>
- Rohwer, M., Kloos, D., & Perne, J. (2012). Escape from metaignorance: How children develop an understanding of their own lack of knowledge. *Child Development*, 83, 1869-1883. <http://10.1111/j.1467-8624.2012.01830.x>

Acknowledgements

Charlotte Halliday, Kayla Fitch, Allie Russell, Hana Ziani-Bey