# Implicit and Explicit Metacognition and Memory in Children

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## Introduction

- Children are often required to provide memory evidence in criminal justice settings
- Younger children's memory statements are often disregarded as inaccurate as age is used as a proxy for memory accuracy
- Age can be a misleading metric – research has shown children can indicate their certainty/uncertainty in other ways
- We investigated if explicit (e.g., **confidence**) and implicit (e.g., **vocal** and **body gestures**) metacognitive measures predicted memory accuracy in children aged 4 - 8

2-alternate-forced-choice task questions

Confidence scale (Bruer et al, 2017)

Box sorting task (Hembacher & Ghetti, 2014)

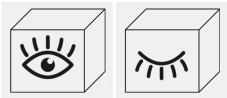


Fig. 1

## Methods

- Children aged 4 - 8 (mean age 6.05, SD 1.39)
- N = 50 (41 after data exclusion)
- Encoded 2 complex episodic events
- Data collected over Zoom - each session recorded
- Completed a 2-alternate-forced-choice task
- Confidence rating scale (Bruer et al, 2017)
- Box sorting task (Hembacher & Ghetti, 2014)

## Children aged 4-8 appear to have good metacognitive ability when reporting memories from a complex event

Fig. 2

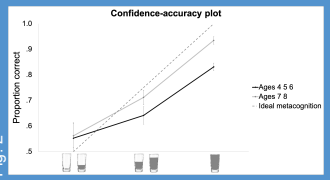



Fig. 3

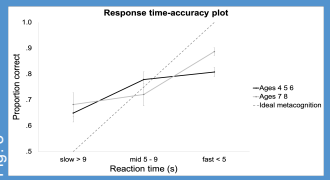
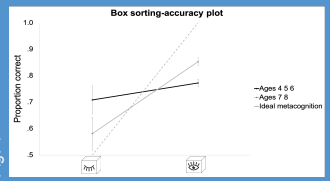



Fig. 4




- Confidence and reaction time are informative of memory accuracy in children, especially for ages 7-8
- Other implicit measures appear to be informative of accuracy
- Judgments about children's reliability should not be made based on age alone

## Results

- When children were incorrect, they made **lower confidence judgements**, had **increased reaction times**, and more frequently chose to **hide** their answers.
- Children performed more **head tilts**, **thinking gestures, hedged** more and used more **fillers** when their answers were incorrect.
- They also performed more **boosters** when their answers were accurate.
- Not many children performed **head shakes, shrugs**, or **looked to caregiver** when accurate or inaccurate, so these measures could not be used to predict children's memory accuracy.

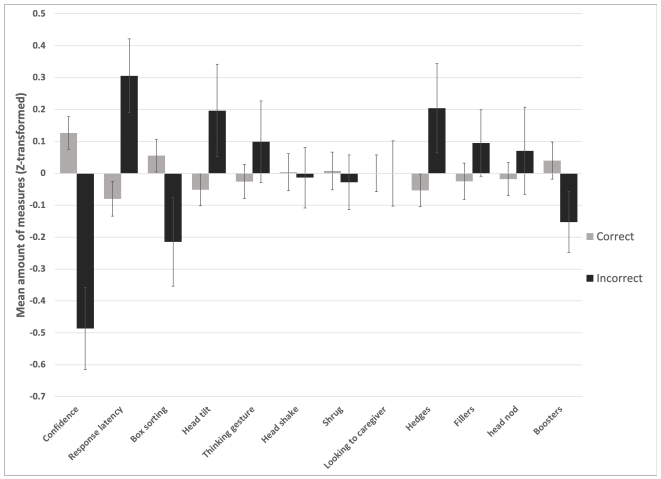



Fig. 5

**References**
Bruer, K. C., Fitzgerald, R. J., Price, H. L., & Sauer, J. D. (2017). How sure are you that this is the man you saw? Child witnesses can use confidence judgements to identify a target. *Law and Human Behaviour, 41*(6), 541-555.
Hembacher, E., & Ghetti, S. (2014). Don't look at my answer: Subjective uncertainty underlies preschooler's exclusion of their least accurate memories. *Association for Psychological Science, 25*(9), 1768-1776.