The Roles of Overconfidence, Overclaiming, and Cognitive Reflection in Children’s Belief in Myths

Candice Ma, Jenny Nissel, and Jacqueline Woolley
Department of Psychology, The University of Texas at Austin

INTRODUCTION
- People with the least expertise in a category misjudge their knowledge or performance in that category the most.
- Those who are less knowledgeable and more misinformed about autism tend to believe they know more than medical experts and trust non-experts more.
- In adults, overclaiming is correlated with narcissism, self-deceptive enhancement, and self-perceived knowledge.
- In adults, poor cognitive reflection is associated with:
  - Higher rates of overclaiming.
  - Higher susceptibility to fake news.
- In children, poor cognitive reflection is associated with:
  - Lower accuracy in discerning true scientific statements from false scientific statements.
  - Smaller improvement after receiving instruction.

HYPOTHESIS
- Children who are confident in their knowledge, overclaim their knowledge, have lower cognitive reflection, and are younger in age are more likely to believe in scientific myths about animals.

METHODS
- 50 participants total
- Participants ranged from 7 to 10 years of age
- Recruited from Children’s Research Center database

MATERIALS
- Myth questionnaire: measured endorsement of 8 scientific animal myths
- Confidence questionnaire: measured self-perceived knowledge of animals
- Child overclaiming questionnaire: measured overclaiming of animal knowledge
- Developmental cognitive reflection test: measured cognitive reflection
- Parent questionnaire: measured parent-given endorsement of myths on the myth questionnaire
- The study was conducted online, with an experimenter interviewing each participant on Zoom.

RESULTS
- Age was predictive of performance on the developmental cognitive reflection test, $R^2 = .33$, $p < .001$.

CONCLUSION
- Children do believe in myths about animals, and their endorsement of these myths varies.
- Self-perceived knowledge, overclaiming of knowledge, cognitive reflection, and age all do not explain myth endorsement.
- These findings suggest that children are skeptical believers. They are likely to believe in myths that have been introduced to them but are skeptical of unfamiliar myths.
- Children’s interest in a topic may predict their overclaiming knowledge of that topic, though previous findings suggest children’s self-perceived knowledge of a topic is more closely associated with overclaiming.
- These findings support past research on age and cognitive reflection.

FUTURE DIRECTIONS
- Future research is needed to better capture overclaiming in children.
- Future research might investigate myth endorsement in adults to see if myth endorsement persists throughout the lifetime.

KEY REFERENCES

ACKNOWLEDGEMENTS
Thank you to Dr. Jones, Kyelle Smith, Amanda Chiang, Melanie Lown, and the Woolley Lab research assistants for their help. Additionally, thank you to the Plan II Thesis Grant and the Undergraduate Research Scholarship for funding this research.