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That's IrrELEPHANT: Children's Judgments of Relevant and Irrelevant Animal Observations

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BACKGROUND

When learning about science, children encounter a lot of information and they need to decide what is most helpful.

When hearing explanations about the same topic (e.g., cars), 7-year-olds rate true and relevant evidence as more helpful than false and irrelevant evidence (Johnston, Sheskin, & Keil, 2019).

However, when the topic is unfamiliar, even older children have difficulty evaluating evidence (Rinehart, Duncan, & Chinn, 2014).

CENTRAL RESEARCH QUESTIONS

Do children discriminate between relevant and irrelevant information in the domain of biology?

Are there developmental differences in children's judgments of the helpfulness of evidence?

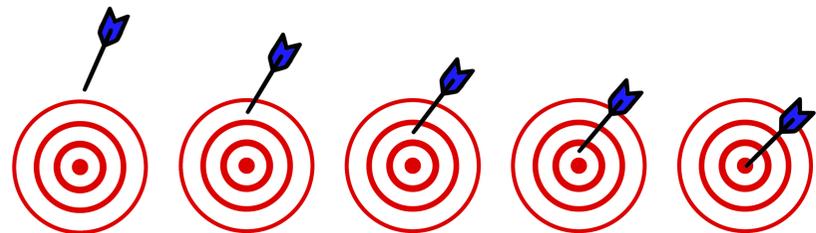
METHODS

Participants:

24 7- and 8-year-olds (12 females, $M_{age} = 8.04$, $SD = 0.59$)
26 9- and 10-year-olds (13 females, $M_{age} = 9.93$, $SD = 0.50$)

Procedure:

Introduction: Participants were told they were going to play a game with animals and their job was to judge the helpfulness of different observations (using the following scale) for figuring out if an explanation was correct. Children were trained and had practice on the rating scale.



Not helpful at all A little helpful Sort of helpful Very helpful Extremely helpful

Test Trials: Participants completed 5 test trials with different animals represented in each trial.



Killdeer Snapping Turtle Meerkat Hagfish Bowerbird

METHODS (continued)

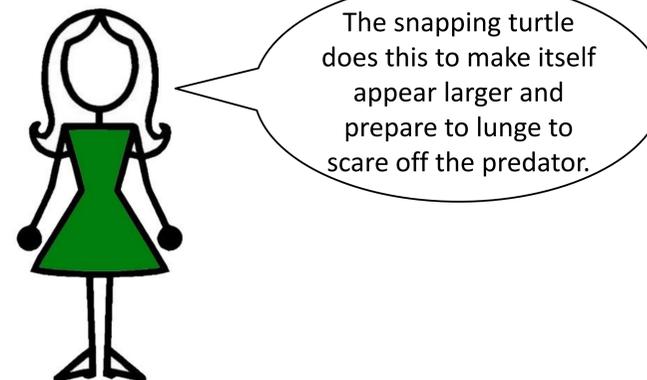
Test Trial Example:

Animal Behavior:



When a snapping turtle is walking on land and a predator comes near, it will stand up on its hind legs.

Explanation:



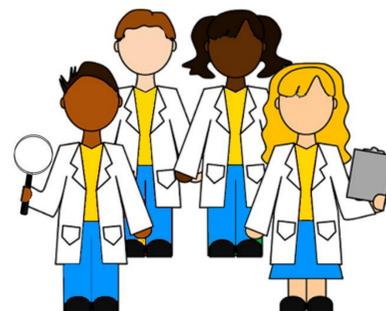
Observations:

Same Animal-irrelevant:

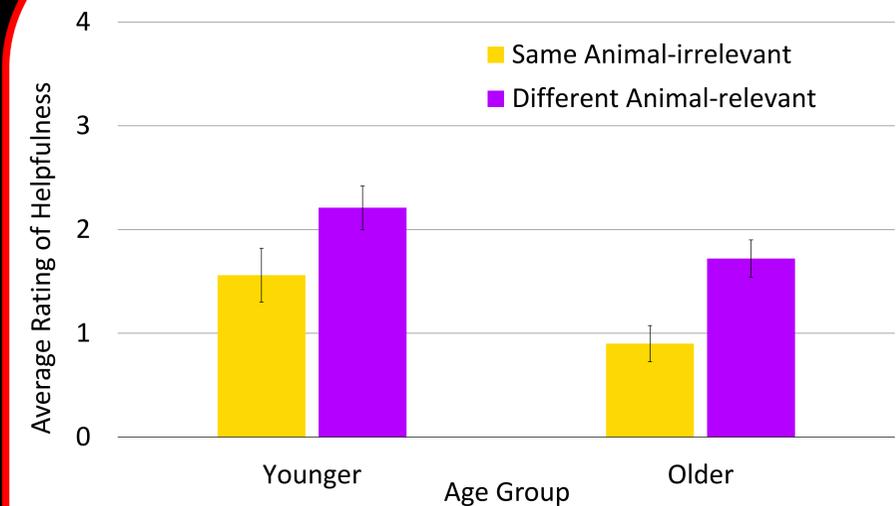
"Scientists have observed that a snapping turtle prefers to live in lakes, rivers, or streams that have a muddy bottom. How helpful is the scientists' observation for figuring it out if Sue's explanation is correct?"

Different Animal-relevant:

"A different group of scientists have observed that predators who see a blowfish who has expanded to twice its usual size will swim away. How helpful is the scientists' observation for figuring it out if Sue's explanation is correct?"



RESULTS



Children rated observations that were irrelevant as less helpful than observations that were relevant, $F(1, 48) = 30.27$, $p < .001$

Younger children were more likely to rate both observations as more helpful than older children, $F(1, 48) = 4.93$, $p = .031$

DISCUSSION

By age 7, children can distinguish between relevant and irrelevant information and can decide which is more helpful when learning about biology.

Children were not influenced by the topic and instead rely on the relevance of the information.

Classroom experience may contribute to the children's ability to evaluate the helpfulness of different types of evidence.

Although children are capable of evaluating information, their ability to do so may continue to improve over time and they may still benefit from adult support.

REFERENCES

Johnston, A., Sheskin, M., & Keil, F. (2019). Learning the relevance of relevance and the trouble with truth: Evaluating explanatory relevance across childhood. *Journal of Cognition and Development, 20*(4), 555-572.
Rinehart, R., Golan Duncan, R., & Chinn, C. (2014). Teacher's toolkit: A scaffolding suite to support evidence-based modeling and argumentation. *Science Scope, 038*(04), 70-77.

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