



Ignorance = doing what is reasonable: Children expect ignorant agents to act based on prior knowledge

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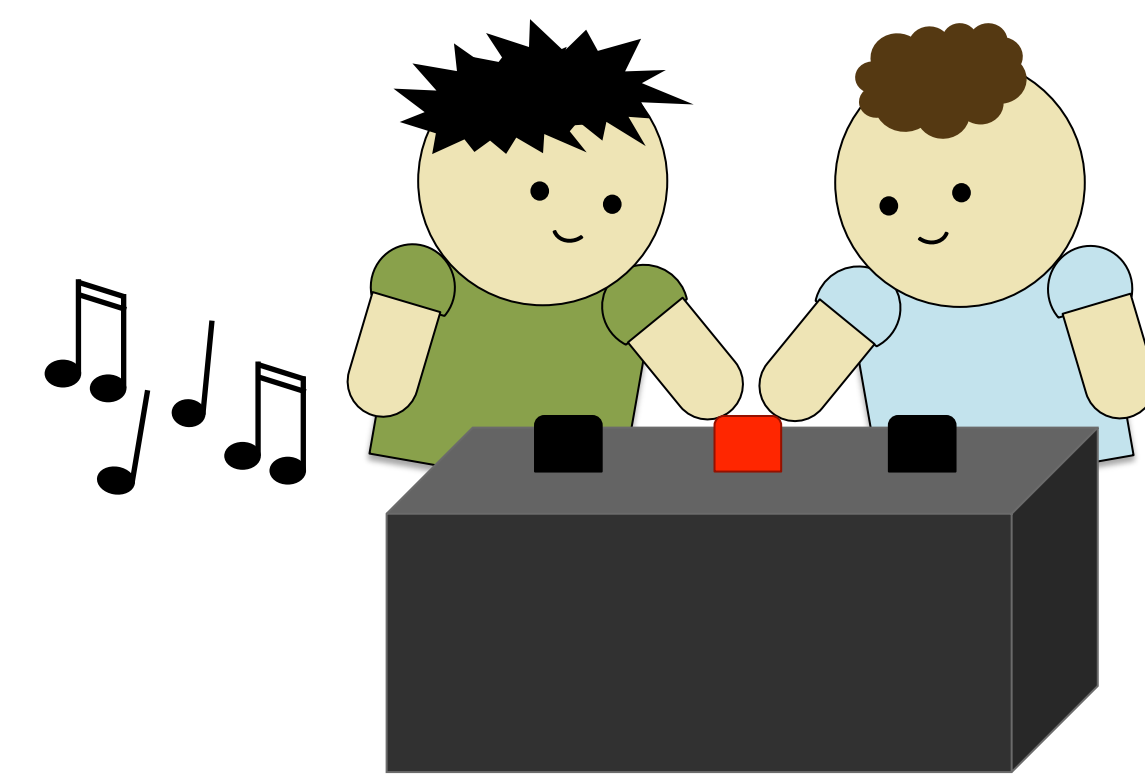


Introduction

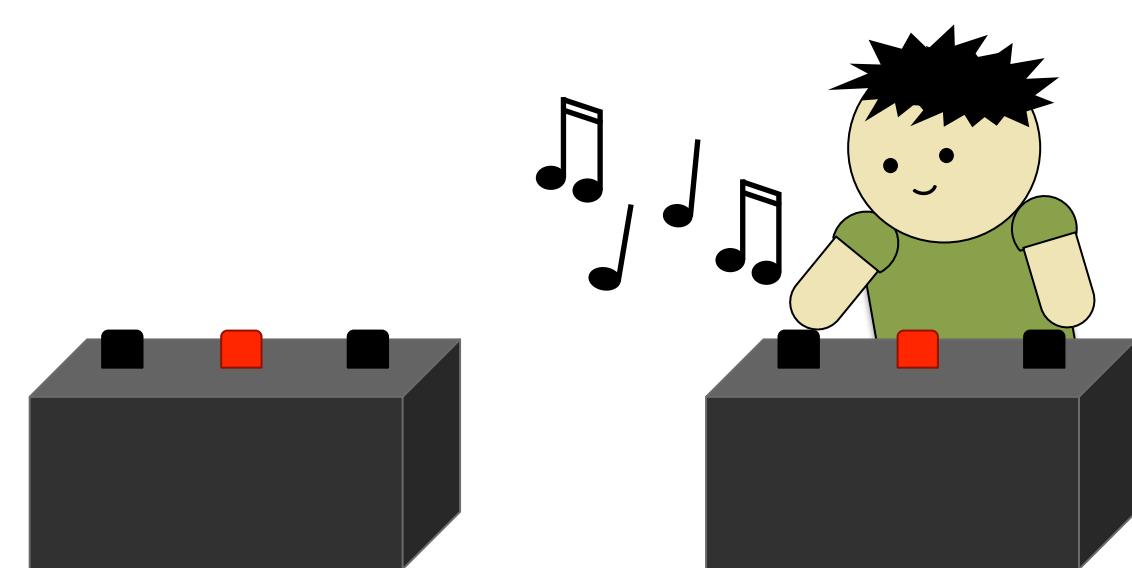
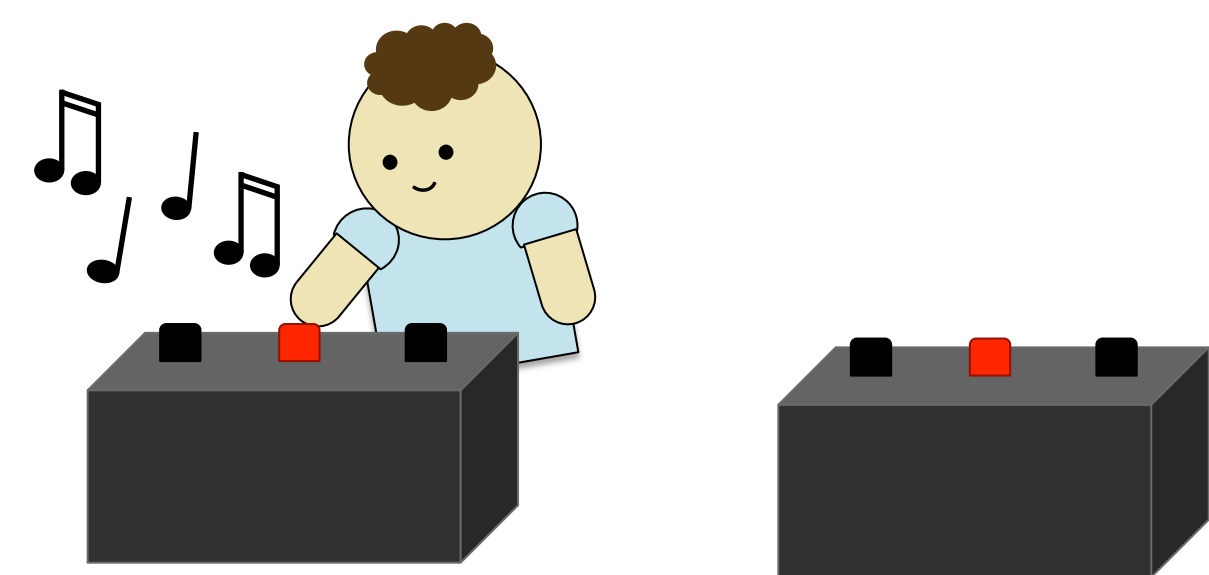
We expect others to draw on relevant prior experiences when facing new situations. This expectation allows us to predict others' behavior, and infer others' prior knowledge from their current actions. Do children expect ignorant agents to leverage their prior knowledge in new situations? And if so, do children use this expectation to infer what others know from what they do?

Procedure

Experiments 1 & 2:
Both agents learn how to make a toy go

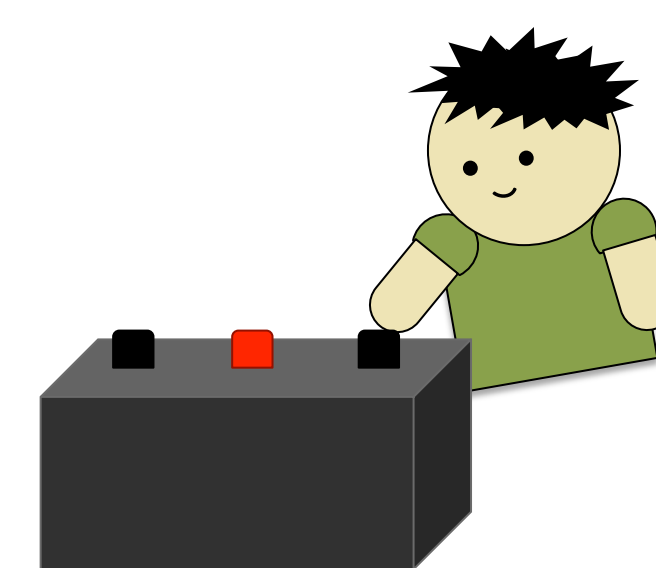
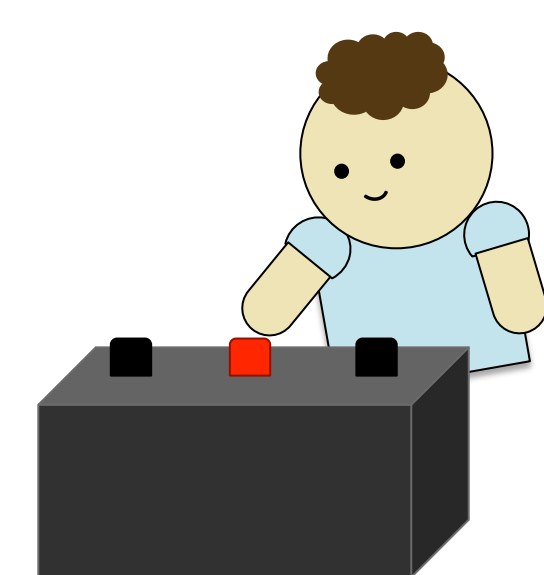


Experiment 1:
Both agents successfully
activate a novel toy



Test question:
Who **already played**
with all the toys?

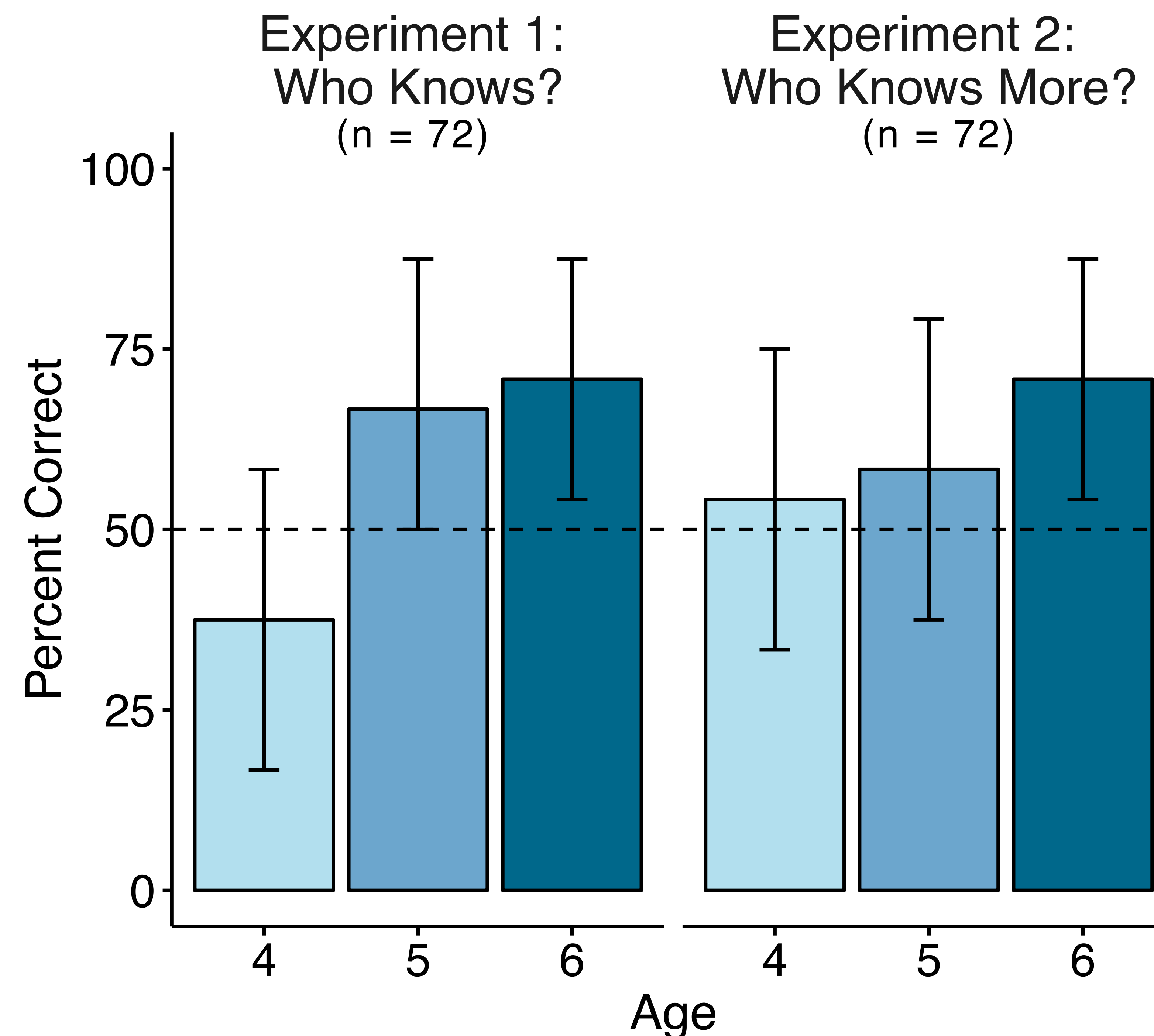
Experiment 2:
Both agents fail to
activate a novel toy



Test question:
Who knows **more**
about the toy?

Note that one agent acted consistently with his prior experience (pressing the red button), and the other did not.

Results



In Experiment 1, five- and six-year-olds (but not four-year-olds) judged that the agent who acted *inconsistently* with his initial experience had additional knowledge about the toys.

In Experiment 2, six-year-olds (but not younger children) judged that the agent who acted *inconsistently* knew more (but crucially, not all) about the toys.

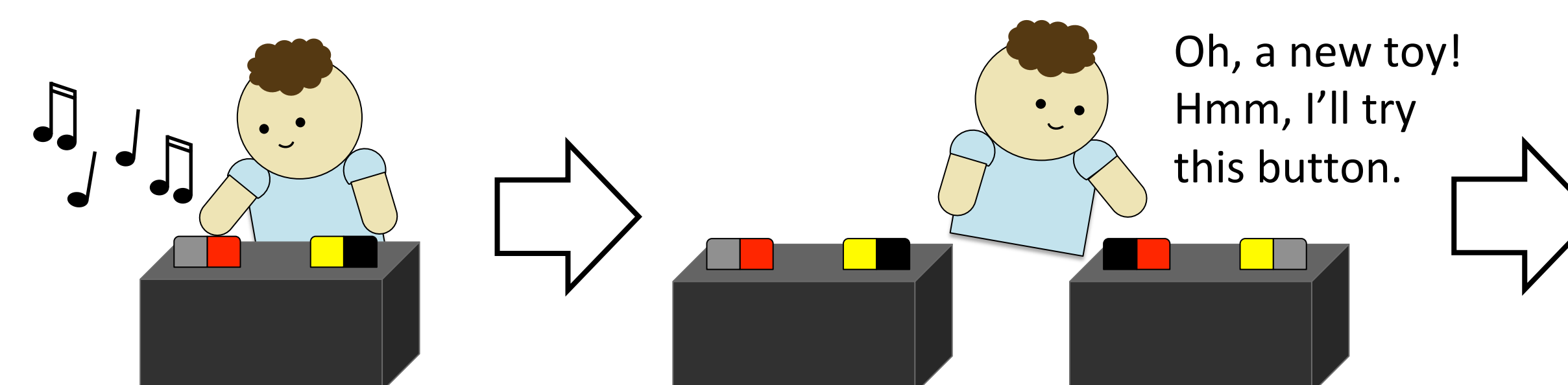
Experiment 1			Experiment 2	
Age	% Correct	95% CI	% Correct	95% CI
4	37.5%	16.7 - 58.3	54%	33.3 - 75
5	66.6%	50 - 87.5	58%	37.5 - 79.2
6	70.8%	54.2 - 87.5	70.8%	54.2 - 87.5

The procedure, sample size, predictions, and analyses for all experiments were pre-registered.

General Discussion & Conclusion

By age five, children expect agents to act based on their prior knowledge, and use this expectation to infer others' past experiences from their current actions. And by age six, children use this expectation not only to infer who knows, but to infer who knows *more*. These results are consistent with prior findings that children do not reliably link ignorance with specific outcomes (Friedman & Petrashek, 2009; Ruffman, 1996), and are a first step towards understanding children's naïve theories of knowledge.

Future Directions: Children may have inferred that the inconsistent actor was knowledgeable due to simpler rules: for example, assuming that ignorant agents should try what is obvious (the red button), or that ignorant agents should repeat their prior actions. Ongoing work tests whether children monitor agents' prior experiences, and reference these experiences when explaining agents' current actions.



Test question:
Why did he pick that button? Because
it's red (*shared feature*), or because
it's black (*unshared feature*)?

References:
Friedman, O., &
Petrashek, A. R. (2009).
JECP, 102(1) 114-121.
Ruffman, T. (1996). *Mind &
Language*, 11(4), 388-414.