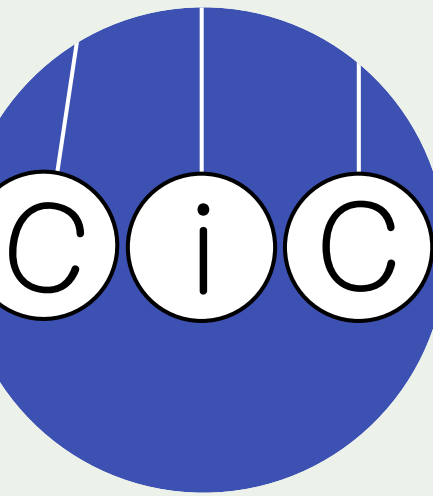


Young children use mental simulation to reason about their performance

Peter Zhu, Chloe Chang, Tobias Gerstenberg, Hyowon Gweon

Department of Psychology, Stanford University



How do we decide when to persist and which tasks to pursue?

One obvious answer: **observed** performance outcomes

However, observed performance outcomes are (1) not always available, and (2) not necessarily indicative of our true ability!

Our claim: in addition to clear observable outcomes, children can also use mental simulation to decide how/when to pursue tasks!

paradigm

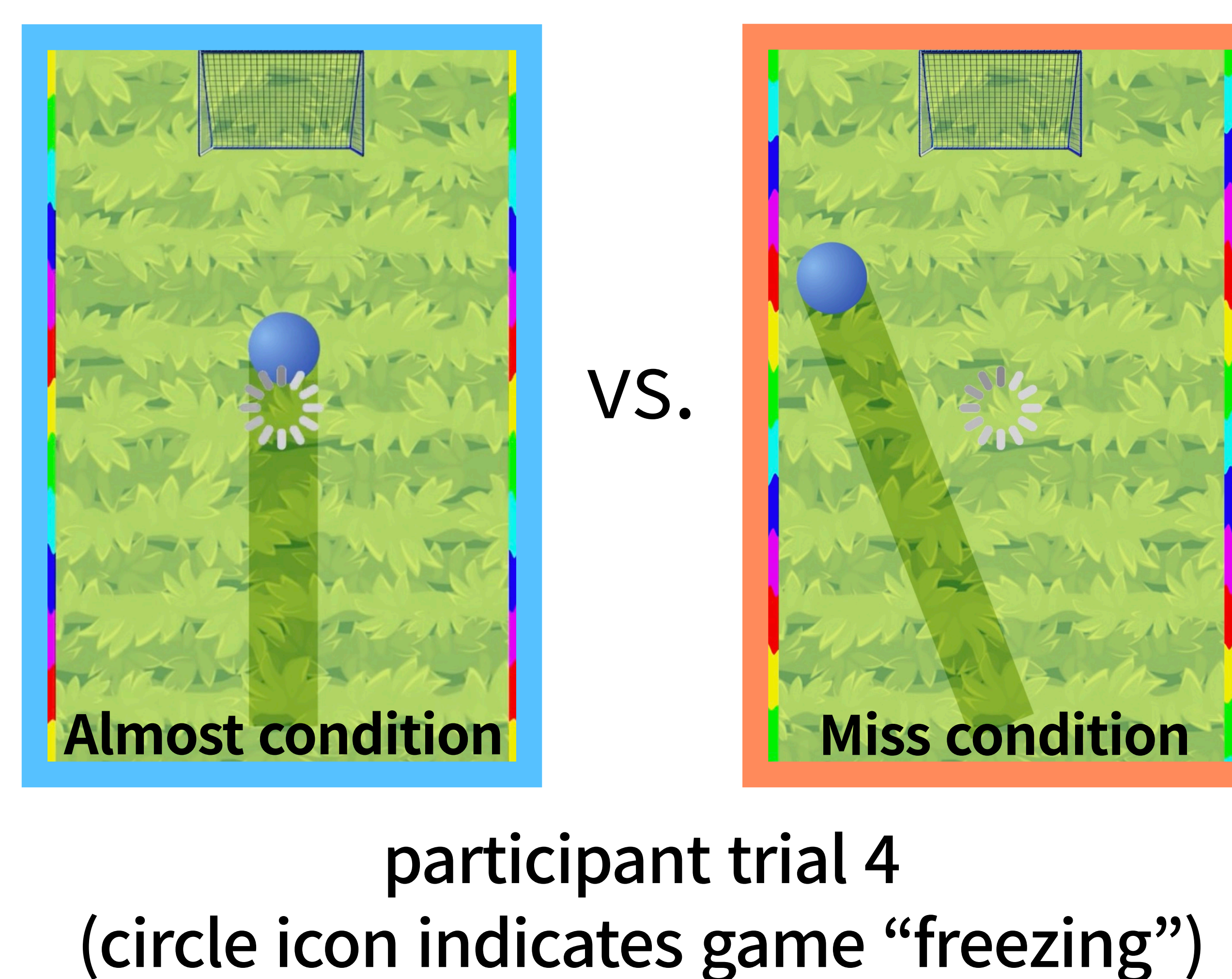
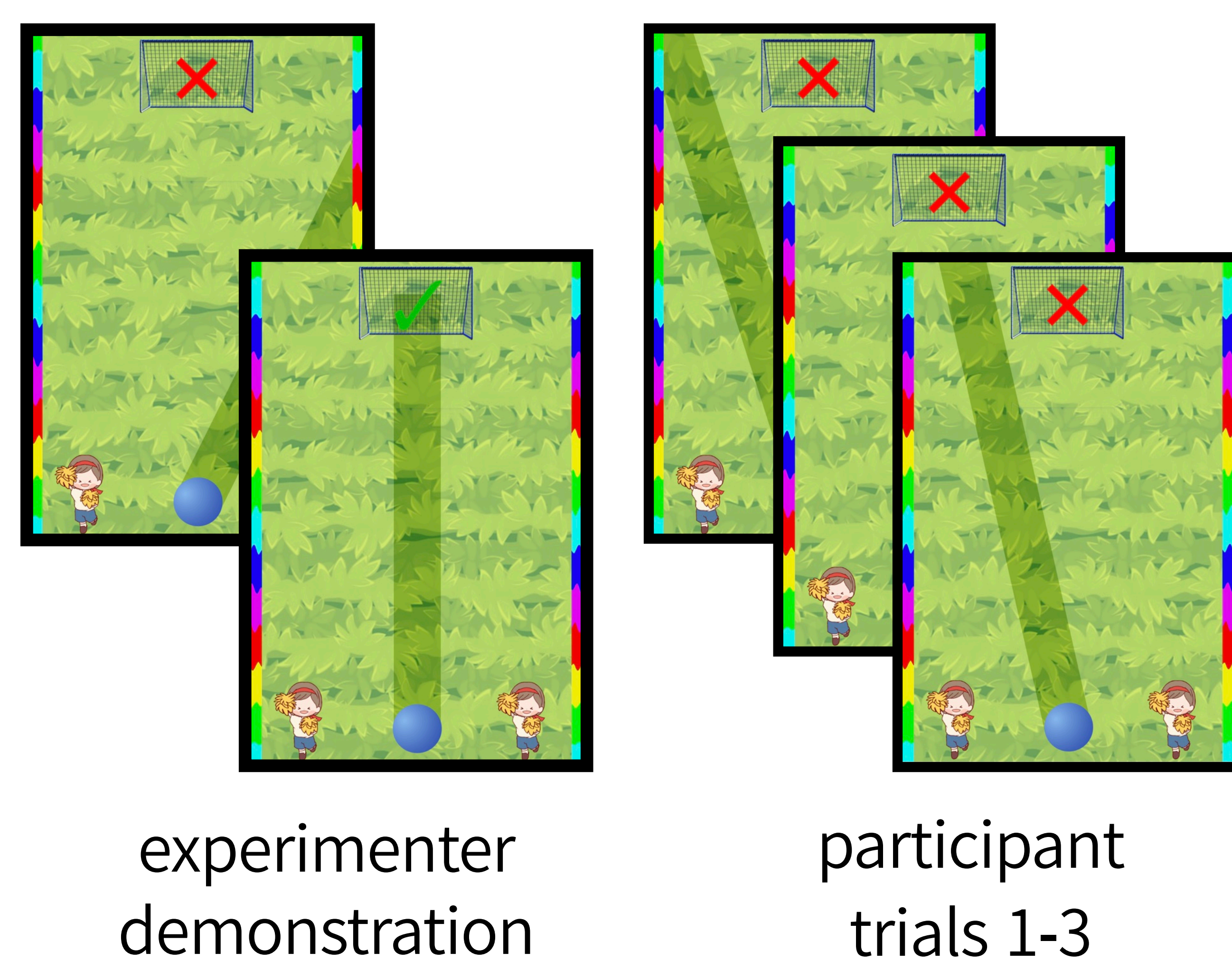


Children play a “soccer” game: blowing into the box seemingly launches a ball toward a goal

expt 1: reasoning in the absence of direct outcomes

Experimenter demonstrates 2x, then children attempt 3x (all misses)

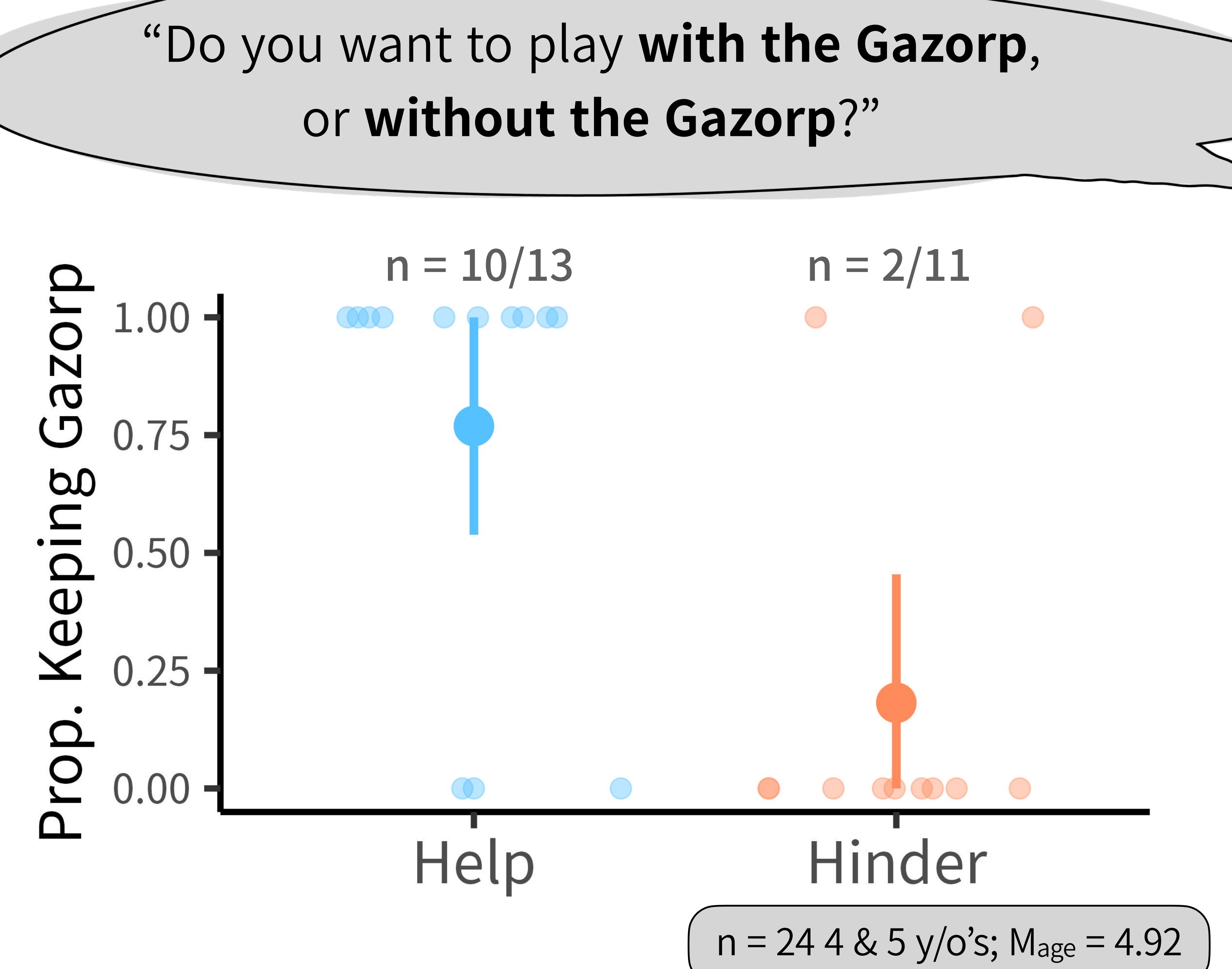
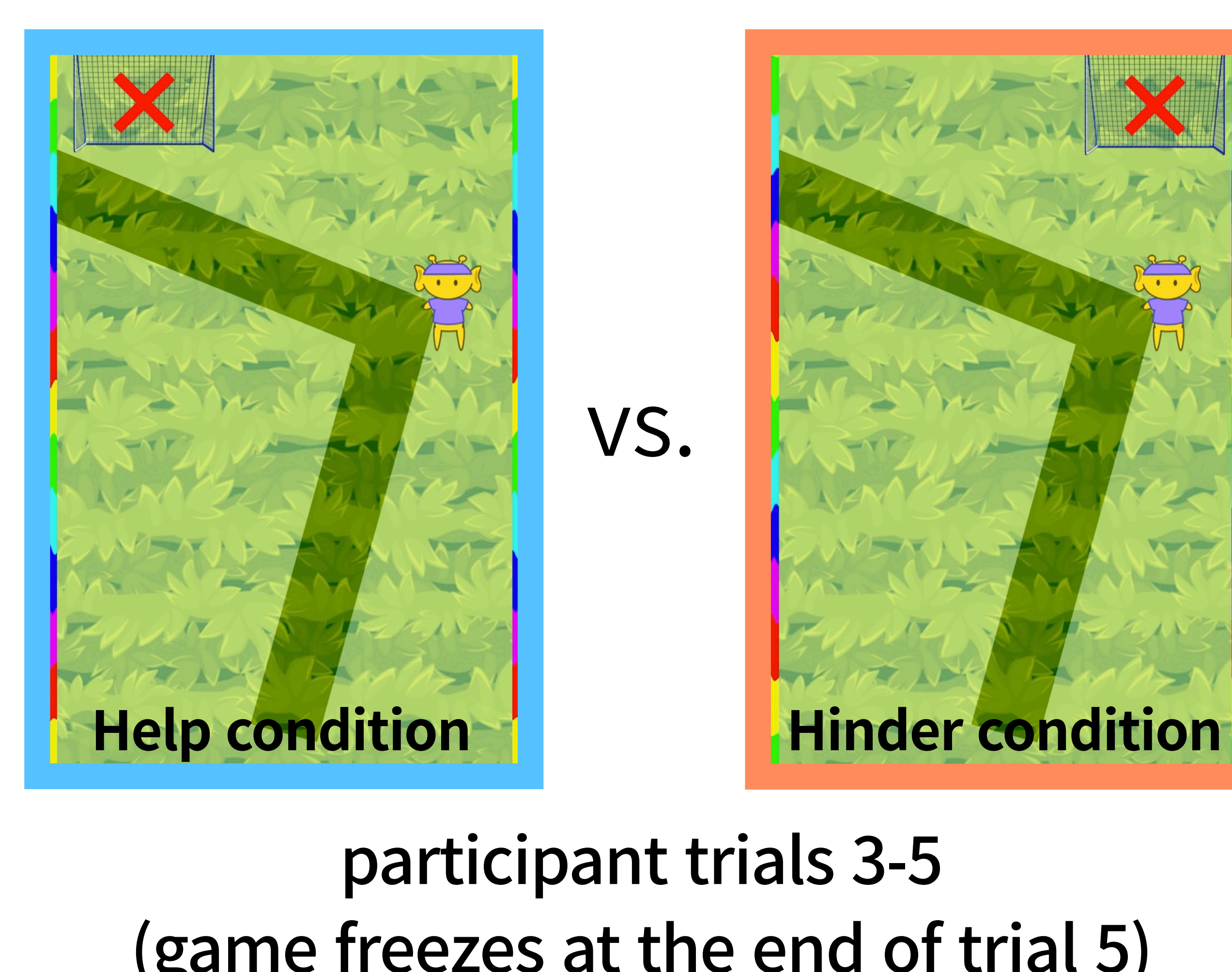
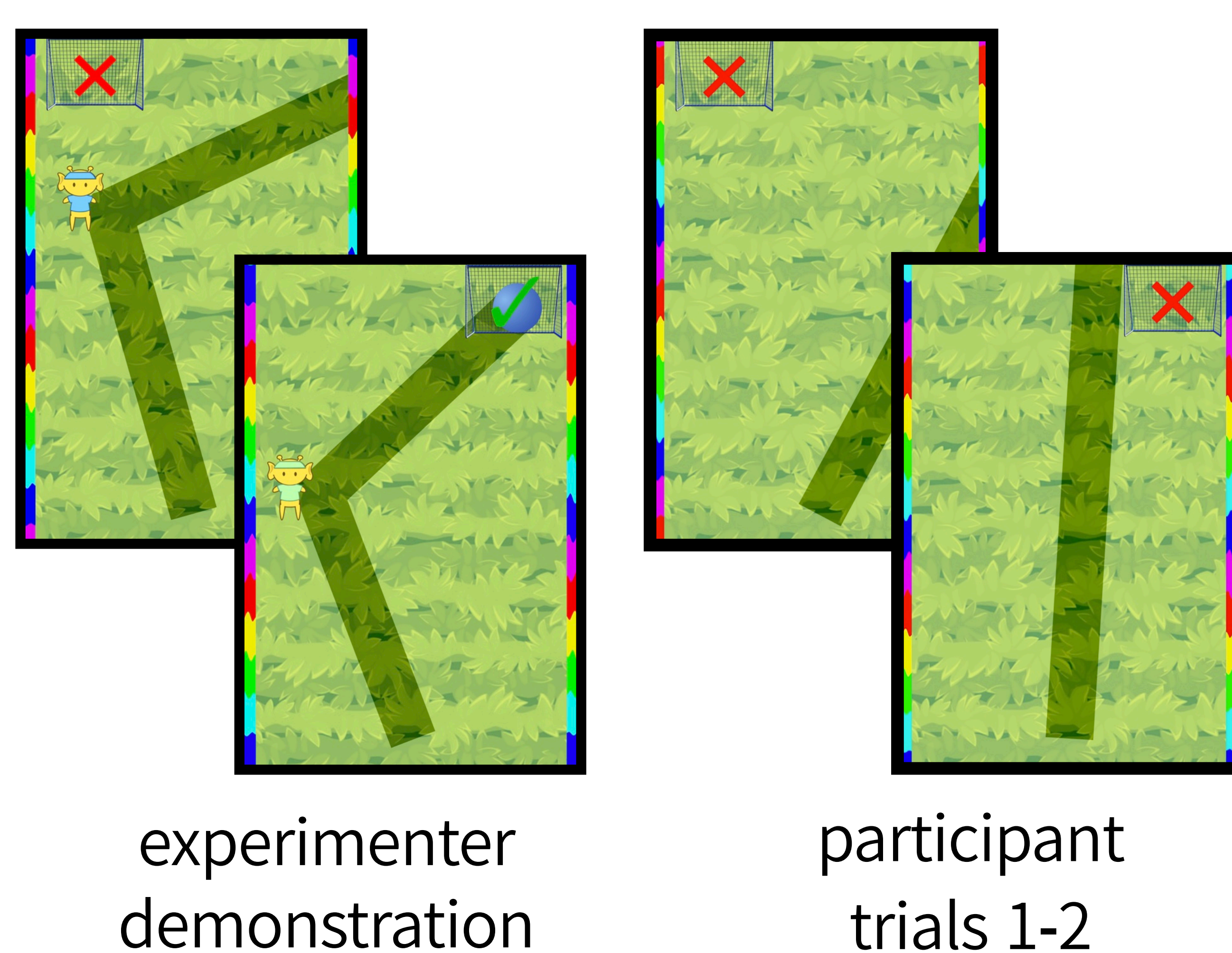
On children’s 4th try, trajectory differs by condition; game “freezes” before reaching the top



expt 2 (ongoing): using simulated over direct outcomes

Experimenter introduces Gazorps, then children attempt game 2x w/o Gazorp present

On children’s 3rd, 4th, and 5th tries, a purple Gazorp appears and either helps or hinders, based on condition



discussion

Even without clear outcomes, children can use mental simulation to reason about their performance & guide how they pursue future tasks!

Ask me about these future questions!

- To what extent do the current results (Experiment 2) reflect **genuine counterfactual reasoning**?
- Does simulated evidence **hold as much weight** as direct performance?
- Can children use simulated performance to assess the competence of **other agents** in addition to themselves?

acknowledgments

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reach out!



email: pgzhu@stanford.edu

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