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Can toddlers learn causal action sequences?

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Abstract

Toddlers, like older children and adults, can learn cause-effect relationships between a single action and its outcome. However, causality in the real-world is more complex. We investigate whether toddlers can learn, from observing an adults demonstration, that a sequence of two actions is causally necessary for producing an effect. In Experiment 1, toddlers and preschoolers (N=142; ongoing) saw evidence that a 2-action sequence was necessary to make a puzzle-box dispense a sticker, before trying to get stickers themselves. Preliminary results indicate that older children produce more sequences than younger children. Experiment 2 (N=42; ongoing) is examining whether 1- and 2-year-olds behave differently from in Experiment 1 when the demonstration provides evidence that a sequence of actions is not necessary (specifically, that the second action alone is causally effective). Although preliminary, our findings suggest that the ability to accurately infer causal structure from action sequence demonstrations may develop over early childhood.