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Proceedings of the Annual Meeting of the Cognitive Science Society

Title

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Permalink

<https://escholarship.org/uc/item/5z22g57k>

Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 43(43)

ISSN

1069-7977

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Publication Date

2021

Peer reviewed

What happened here? Children integrate physical reasoning to infer actions from indirect evidence

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Abstract

As we navigate through the world, we often leave traces of our actions: a broken branch, a footprint in the mud, a dirty coffee mug at a desk. As observers, these traces enable us to make surprisingly complex social inferences about the actions that may have caused them: what the other person may have been doing, what their likely goals were, and more. But how might a conspicuous lack of evidence prompt this same reasoning? We hypothesize that children use intuitive physics to infer possible prior actions and their outcomes, even in the absence of evidence. In support of this proposal, we found that children readily reconstruct an agent's actions after observing indirect evidence. Importantly, they are also able to use the difficulty of concealing such evidence to interpret its absence.