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Authors

Rett, Alexandra

Goldwater, Micah

Walker, Caren M.

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Children's Recognition of Shared Causal Structure in Mechanical Systems

Alexandra Rett

UC San Diego, La Jolla, California, United States

Micah Goldwater

University of Sydney, Sydney, Australia

Caren Walker

University of California San Diego, La Jolla, California, United States

Abstract

Children are capable of using the causal properties of objects to determine category membership. Can they also recognize causal system categories, or abstract patterns of causation that apply across phenomena (Rottman et al., 2012)? For example, do children recognize that one causal chain (e.g. the transmission of salmonella across species) shares the same underlying structure as a chain in another domain (e.g. heat transfer between objects)? If so, recognizing that superficially distinct events share the same underlying causal system may facilitate knowledge transfer. In Study 1, 6- to 7-year-olds and adults, but not 4 to 5-year-olds, are capable of identifying simple machines that share the same causal structure. In ongoing work, we control for low-level perceptual similarities and explore whether adults and children recognize similar causal structures among unique mechanical systems. We also consider whether their recognition of causal systems can be used to support knowledge transfer.