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Building explanations: Children's explanations reveal developing coordination of causal knowledge and perspective-taking

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Abstract

Generating explanations requires coordinating causal understanding with perspective-taking. This work tests how children integrate these capacities using a novel paradigm. We presented children ages 4-7 with conjunctive causal scenarios where two causes contributed to an outcome. Two characters each possessed partial knowledge of only one cause. Children predicted what each character would say caused the outcome and provided their own explanations for the outcome. Children successfully predicted single-cause explanations from characters' perspectives, with age-related improvement. Generating conjunctive explanations from their own perspective showed dramatic developmental gains: 44% adult-like reasoning in 4-5-year-olds versus 72% in 6-7-year-olds. Two ongoing experiments disentangle these demands by selectively removing one: the first gives both characters shared knowledge, eliminating the perspective-taking demand; the second retains two actions but only one causes the outcome, eliminating the conjunctive demand. Together, this work reveals explanation as a developmental achievement built through active construction.