

# **Preschoolers jointly consider others expressions of surprise and common ground to decide when to explore**

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## **Abstract**

Prior work on early social learning suggests that children are sensitive to adults pedagogical demonstrations and verbal instructions. Yet, people also display various emotional expressions when interacting with children. Here we show that young children draw rich causal inferences and guide their own exploration based on others expressions of surprise. Preschoolers (age:3.0-4.9) saw an experimenter discover a function of a novel causal toy. Then, either the same experimenter or a nave confederate expressed surprise while playing with the toy behind an occluder. Children explored the toy more broadly to search for a hidden function following the experimenters surprise than following the confederates surprise, suggesting that children integrated others expressions of surprise and others epistemic states to infer the presence of hidden functions and explore accordingly. This study synthesizes perspectives from literature on social learning, exploration, and affective cognition towards a more comprehensive science of learning. Preprint:<https://psyarxiv.com/ckh6j>