Look before you leap: Quantitative tradeoffs between peril and reward in action understanding

Nensi Gjata
Harvard University, Cambridge, Massachusetts, United States

Tomer D. Ullman
Harvard University, Cambridge, Massachusetts, United States

Elizabeth Spelke
Harvard University, Cambridge, Massachusetts, United States

Shari Liu
Harvard University, Cambridge, Massachusetts, United States

Abstract

When we reason about the goals of others, how do we balance the positive outcomes that actions led to, with the potentially bad ways those actions could have ended? In a four-part experiment, we tested whether and how adults (full study) and 6- to 8-year-old children (ongoing study) expect other agents to take account of the ways their goal-directed action could have failed. Across 4 different tasks, we found that adults expected others to negatively appraise perilous situations (deep trenches), to minimize the danger of their actions, and to trade off danger and reward in their action plans. Our preliminary childrens study shows similar trends. These results suggest that people appeal to peril-how badly things could go if ones actions fail-when explaining and predicting other peoples actions, and also make quantitative inferences that are finely tuned to the degree of peril and reward that others face.