Interactions Between Categorization and Intuitive Physics

Anantha Rao
University of Wisconsin - Madison, Madison, Wisconsin, United States

Joseph Austerweil
University of Wisconsin - Madison, Madison, Wisconsin, United States

Abstract

Functioning in the world requires information about objects properties. People perceive object mass using perceptual cues when the material is observable. Here, we examine how people predict an objects motion when its material is unobservable, but predictable from cues learned via category learning. When given an ambiguous object, people tend to predict properties based on the propertys propensity in the most likely category. But, recent work has found that given an ambiguous cue, people will integrate over categories (as rational agents should) in a variety of contexts. In our study, we investigate how uncertainty in categorization affects continuous judgments in the domain of intuitive physics. We incorporate real materials (like wood and iron) into a category learning framework and test peoples judgments about the distance a payload travels in two scenarios before and after category learning. Our results are equivocal, but suggest that people do integrate in these scenarios.