Title

Perceiving unseen objects

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Perceiving unseen objects

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Abstract

We regularly make inferences about the presence and properties of objects or entities in our environment that we cannot see directly, be it while driving, playing sports, or making scientific discoveries. But how do we know what these unseen objects are, and what properties they have? Our studies explore these questions by showing participants scenes of a ball traveling beneath, then later exiting, a covered region, and asking them to recreate a configuration of unobserved obstacles the ball could have bounced off to produce the observed trajectory. We find that in many cases people were able to recover the approximate world structure; however, there were also instances in which people consistently used a configuration with fewer blocks that would cause modest deviations from the observations of the time or direction of the balls trajectory. Inferring unseen objects thus appears to involve a trade-off between parsimony and explanatory power.