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Authors

Morfoisse, Théo

Pajot, Maxence

Papale, Paolo

et al.

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Modeling the development of intuitive mechanics

Tianyi Li

Boston College, Chestnut Hill, Massachusetts, United States

Mengguo Jing

The Ohio State University, Columbus, Ohio, United States

Zakir Makhani

Northeastern University, Boston, Massachusetts, United States

Iris Oved

Boston College, Chestnut Hill, Massachusetts, United States

Nikhil Krishnaswamy

Colorado State University, Fort Collins, Colorado, United States

James Pustejovsky

Brandeis University, Waltham, Massachusetts, United States

Joshua Hartshorne

Boston College, Chestnut Hill, Massachusetts, United States

Abstract

It takes children considerable learning and development to accurately predict whether an object is safely balanced or will fall – something that happens if its center of mass is not supported from below. In the meantime, children go through a characteristic set of mistaken beliefs. Here we use an adapted version of the classical balance task to evaluate whether different models go through the same stages. Preliminary results show that convolutional neural networks (CNNs) do learn the task but do not necessarily go through the same stages. We are also testing several simulation-based accounts. We anticipate completing this work in time for the conference. The findings will help clarify the space of possible accounts of children’s acquisition of intuitions about gravity and balance.