Increased similarity between source and target eases explanatory reasoning

Samantha Roberts
Arizona State University, Phoenix, Arizona, United States

Zachary Horne
Arizona State University, Phoenix, Arizona, United States

Sangeet Khemlani
Naval Research Laboratory, WASHINGTON, District of Columbia, United States

Abstract

Explanatory reasoning is a capacity at the core of human cognition. From an early age, children begin asking why-questions and seem to produce explanations to these questions with remarkable ease. However, the mechanisms underlying explanatory reasoning are only now being uncovered. Recently, Hoyos and Gentner (2017) revealed that comparison plays an important role in explanatory reasoning. To further examine this hypothesis, we conducted a study with children between the ages of 4 and 12 (N = 55) aimed at testing whether the similarity between two concepts affected childrens ability to explain a relation between these concepts. Specifically, we tested whether children would more rapidly produce explanations of why-questions like Why are trains bigger than cars? (high-similarity) compared to Why are trains bigger than row boats? (low-similarity). Consistent with prior work, we found that children more rapidly produced explanations of the relation between high-similarity concepts compared to low-similarity concepts.