

Learning Relational Concepts through Unitary versus Compositional Representations

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Abstract

Current theories of relational learning on structure mapping emphasize the importance of compositional representations, based on the concept's components and the relations among them. We consider the possibility that relational concepts can also be represented *unitarily*, whereby the concept is a property of the stimulus as a whole. The distinction between compositional and unitary representations of relational concepts is a natural consequence of structure-mapping theory, but its psychological implications have not been explored. We report two experiments in which we examine how encouraging subjects to represent relational concepts compositionally versus unitarily affects learning on classification- and inference-based category learning tasks. Our findings show that unitary representations lead to better learning than compositional representations, especially for the inference task. We conclude that unitary representations incur less cognitive load than structural alignment of compositional representations, and thus may be the default for everyday relational reasoning.

Keywords: Relational Learning; Relational Structure; Concept Representation; Category Learning; Inference.