Leveraging Game Structures to Promote Biological Category Learning

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Abstract

People often assume that biological categories possess a unique essence. This misrepresents within-species variability and the drastic changes that characterize many species' lifecycles. To counter essentialist conceptions, people must not only encounter variable exemplars but also abstract relevant relations across them. We tested a game to promote such learning in young children: a "biologized" version of *War* using cards showing life stages of two insects, the monarch butterfly and ladybug. Players drew a card on each round, and the player whose card showed the later life stage won. We randomly assigned approximately 150 children (M = 6.5 years) to play War or *Memory*, a game requiring comparisons based on identity rather than lifecycle relations. Children who played War showed a stronger pretest-posttest shift from essentialist to accurate lifecycle representations for the species in the game. This shows how game structure can be leveraged to promote biological category learning from exemplars.

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