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Task strategies mediate the interaction between working memory and other cognitive systems

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Abstract

Individuals can learn differently, even in very simple tasks. In an association learning task, participants learned associations between correct keypresses and sets of categorically related images. Following a delay, participants were then tested on the associations in a surprise test. This task has been used to examine the relationship between reinforcement learning and working memory. However, the strategies that individuals use to explore the associations between keypresses and images as well as the opportunity to take advantage of a simple rule based on the structure of the task without having to retrieve the correct response may both impact test performance. Two experiments were conducted to test these hypotheses. Results showed that the performance difference from the end of the learning phase to the testing phase differed significantly between set size conditions in a way that is more consistent with strategic differences than an interaction between working memory and reinforcement learning.