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Verbal working memory capacity modulates category representation.

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Abstract

Previous studies investigating the influence of a working memory load on category learning gained mixed findings. The current study investigated the role of increased working memory load in the processes of encoding two artificial categories with a rule-plus-similarity structure. During category learning, adults were trained with a dual-task that integrated the category learning task with a secondary working memory task. Participants were instructed to retain verbal (auditorily delivered) information while learning the categories in each trial. The learning phase was followed by recognition and categorization tasks evaluating their learning of the categories and memory for exemplar features. The results indicated that verbal working memory load affected category learning and representation as compared to the control condition where participants learned the categories without interference. The dual-task paradigm disrupted attention optimization and the formation of a rule-based category representation while increasing the probability of similarity-based encoding.