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Contingency learning decreases when associations are shared

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Abstract

In the color-word contingency learning paradigm, each word appears more often in one color (HI contingency) than in other colors (LO contingency). Despite the words being irrelevant, responses to the relevant colors quickly become faster to HI than to LOs—the contingency learning effect. Across four experiments ($N = 1,490$), the number of response-irrelevant word stimuli linked to each of the three response-relevant colors varied from 1 to 2 to 4. Our prediction, derived from the Parallel Episodic Processing (PEP) 2.0 model, was borne out: The magnitude of the contingency learning effect declined monotonically as more words were linked as HIs to each color. Inconsistent with the PEP model, however, we observed changes in response times not only in HI but also in LO trials, indicating a need to amend the model. Associative learning may therefore be a function of prioritizing high probability items at the expense of low probability items.