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Categorical perception as inference under uncertainty: New evidence from color

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Abstract

The category adjustment model of Huttenlocher, Hedges, and colleagues explains category effects on memory or perception in terms of probabilistic inference. This model has been shown to account for category effects in color cognition across several languages, suggesting that effects of language on color cognition reflect standard principles of inference under uncertainty. Previously unexamined is whether the same model can illuminate an influential intuition advanced by Kay and Kempton: that language is likely to affect cognition primarily when purely perceptual discrimination of stimuli is difficult because the stimuli are similar. Recent data by Welch et al. support this intuition. Here, we show that the category adjustment model accounts for these new data as well, strengthening the case for viewing category effects of language on cognition through the lens of probabilistic inference.