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Discrimination difficulty modulates effects of language on perceptual discrimination

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Abstract

Although much evidence suggests that language influences perceptual discrimination, relatively little research has explored factors that might modulate such effects. Some have proposed that effects of language may be stronger for more difficult discriminations than for easier ones, yet previous studies have merely assumed this idea or tested it in a manner that treats languages influence as all-or-none rather than graded. Here we provide evidence for graded effects of language across systematically varied levels of discrimination difficulty. Using color as a testbed, we show that categorical perceptionenhanced discrimination at category boundariesincreases with difficulty, defined by the perceptual similarity between colors. Evidence for the modulatory role of difficulty was observed across two different linguistic category boundaries and two different perceptual tasks. Our findings provide insight into the conditions under which language shapes perception and converge with recent models that consider such effects in probabilistic terms.