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Visual Similarity and Difference with Separable and Integral Dimensions

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Abstract: Similarity is central to human cognition. It is connected in some part to nearly all theories in cognitive science. Yet despite its relevance, as a phenomenon it remains little understood. How does the perceptual system constrain similarity? Do different types of feature-dimensions influence the perception of similarity? How connected is the perception of similarity to the perception of difference? The current study attempts to answer these questions by controlling for the influence of background knowledge, context, and participants perceived experimenter expectations. Participants were asked to make judgments of pairs of objects that had either separable-dimensions or integral-dimensions. The perception of both similarity and difference resulted in distinct patterns between the two types of feature-dimensions. The non-inversion effect was found for separable stimuli but not integral stimuli. The implications of these findings on current models of similarity are discussed.