Perception of Visual Similarity: Modeling Feature-Based Effects

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Abstract: Similarity is central to human cognition. Its relevance is apparent in nearly all theories of cognitive science. Concept acquisition, metaphor, pattern recognition, priming, predictions, inferences; all these processes rely on similarity. Despite its relevance, relatively little is understood about how similarity is processed. In particular, there is a need to better understand the scope in which our perceptual systems constrain our judgments of similarity. The current study investigates this question in the area of visual cognition. By attempting to control for the influence of categorical knowledge, the goal was to understand how different types of feature-dimensions and category boundaries influence the perception of similarity. A connectionist model was developed to explain these findings.