An Embodied Cognition Approach to Distinguishing Pictorial versus Symbolic Properties of Graphics for Design

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Abstract: As a step toward a science of visual information design, this paper offers a perceptual cognitive model that describes and distinguishes two fundamental properties of graphics: pictorial and symbolic properties. These emerge through two inter-related aspects of the perception-reaction loop: pickup and simulation. I will describe how pictorial properties engage relatively more 'pickup,' while symbolic properties engage relatively more 'simulation.' I will demonstrate that the relevant aspect of pickup is the structure of the light that is perceptually processed from a graphic. I will also demonstrate that the relevant aspect of simulation is how the item being picked up is processed to enable the viewer to appropriately anticipate, predict, or 'simulate' an author's intention.