An Exploration of Limb-Specific and Spatial Codes Triggered by Pictures of Graspable Objects

by

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Abstract

There is much debate in the field of cognition on the nature of affordances; a concept originally invoked by Gibson (1986, as cited in Chong & Proctor, 2019) in reference to the possible actions furnished by a solid object to an embodied agent. Gibson's notion of an affordance has been substantially revised. It is now widely proposed that even images of objects automatically trigger affordances in perceptual tasks (Tucker & Ellis, 1998). Stimulus-response compatibility effects have been used to provide evidence for this claim; however, it has been repeatedly found that spatial compatibility and not anatomical compatibility contributes to these effects. This large body of evidence stands against the claim that the images of objects evoke limb-specific representations. In this thesis, I establish that specific task conditions do indeed trigger motor-based effects of a graspable object on keypress responses. In a set of six experiments, participants were required to make laterality judgments via keypress responses to the image of a hand superimposed on the image of a graspable object. Our results show clear alignment effects that follow the responding hand, regardless of response mode. Participants are consistently faster when they are responding with the hand that they would use to act on the handled object. The presence of these alignment effects demonstrates that our effects are limb-specific in nature. The current set of experiments firmly establishes results that have deep implications for the contemporary notion of an affordance.