Compatibility Effects Evoked by Pictures of Graspable Objects

by

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Abstract

It has been claimed that action representations can be evoked by the image of a handled object (Tucker & Ellis, 1998). Contrary to this view, it may instead be the location of the object’s handle in visual space that generates a spatial code that in turn interacts with selection of response location. For example, an object with its handle extending into right visual space may bias attention to the right, resulting in a faster right- versus left-sided response (Cho & Proctor, 2010).

In the current experiments I present evidence that under certain task conditions, images of objects evoke their corresponding action representations. When subjects engaged in laterality judgments to images of hands presented after or in conjunction with an image of a handled object, motor representations associated with that object were evoked. Although the location of the handle was irrelevant to the task, subjects were faster at responding when the depicted handle location and hand of response were aligned (i.e., right-handed key press to a right-handled frying pan) rather than misaligned. The effect of alignment remained constant across the response time distribution. When subjects made a crossed-hand response, the alignment effect was driven by a correspondence between the location of the object’s handle and the response hand, not the response location. These results contrast with what was found when observers responded to directional arrow cues in place of pictures of hands. With arrow cues, the observed alignment effect appeared to be driven by spatial correspondence between the location of the object’s body and the location of the response button. Moreover, in this case the alignment effect decreased across the response time distribution, in keeping with other cases of spatial compatibility effects (Proctor, Miles, & Baroni, 2011). I conclude that attention to an image of a hand can induce observers to activate motor affordances associated with pictured objects.