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Poster presentation

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Experience Performing Actions and Object Perception: Are Gun Experts or Novices More Likely to See a Gun When Holding One?

Do actions affect how we perceive our visual environment? That is, does processing information in one sensorimotor system (e.g., action) show a transfer effect in another sensorimotor system (e.g., vision)? After all, the actions we take on objects in the world are visually guided. Perhaps our action and object representations begin to overlap with one another as a function of this co-occurrence in our experience. This project tests whether holding a gun increases the likelihood of seeing a gun in an image, and further examines how this effect might depend on an individual's motor history with guns. In three conditions, we vary participants' hand posture while they respond to serially presented images. Participants respond either by raising a gun held canonically, by raising a gun held non-canonically, or by raising a ball whenever they detect a gun in the image. We ask whether the type of grasp people use to make the response affects whether or not they report that a gun is present. The study will determine whether any bias to detect a gun is due to a change in the perceptual confusability of the images (i.e., a shift in d') or a shift in the overall bias to report seeing a gun (i.e., a shift in criterion). We also ask whether each individual's previous experience handling guns affects how strongly action influences perception. The results will determine whether gun experts or novices are more likely to see a gun if they themselves are holding a gun. The findings from this study will inform our understanding of the role of motor expertise on perception and action interactions, and they may have implications for public policy decisions aimed at stemming the misuse of handguns by trained and untrained carriers.

Keywords: Action, object perception, embodied cognition, expertise, gun control