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The influence of agency and affordances on visual anticipation: Insights from the representational momentum paradigm

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Abstract

The sense of agency (SoA) refers to the experience of controlling one's actions and their effects, while representational momentum (RM) denotes a bias in the perceived trajectory of a moving object induced by one's anticipation of movement. Research in cognitive science suggests that control over action modulates anticipative mechanisms. In the present study, we question the influence of SoA on RM. Participants viewed two dots, one of which moved horizontally on the screen. Its movement was either triggered by the computer or by participants. In the former case, participants either could freely choose or were commanded on which dot to trigger. Additionally, given the role of affordances in motor control and movement perception, we tested the effect of adding a tunnel through which the dot could pass. The results showed that agency and affordances influenced movement anticipation with no interaction between the two. Freedom of choice yielded no difference.