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Moving the Goalposts: The Influence of Context on Behavioral Transitions in a Unilateral Manual Reaching Task

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Abstract

Prior work has demonstrated the presence of hysteresis in the control of affordance-guided behavior, whereby behavioral transitions around a critical action boundary vary with directions of change in said action boundary. To date, research on this topic has overlooked the influence of global context on these phenomena. We employ an affordance-based reaching task, whereby participants were asked to move a target to a goal by passing through one of two apertures (size variable or size constant). It was found that the direction of change in the size variable aperture influenced the point of behavioral transitions, and this effect interacted with the location of a preceding goal. Further, considering the nature of the behavioral phase transitions, differences in the structure of entropy were found depending on the direction of change in the size variable aperture. These results are discussed considering a dynamical systems approach, and recommendations for future work are made.