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Strategy shifting in navigation: Insights from trial-level effects in a virtual navigation task

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Abstract

In the dual-solution paradigm (DSP), people learn a route through a virtual environment. After learning, people are asked to navigate to locations in the environment. Individuals vary in the degree to which they rely on the learned route (response strategy) versus a shortcut (place strategy). The present study characterizes trial-level features such as relative target locations, Euclidean distance and number of turns or intersections between locations, and uses a Rasch Model to investigate how spatial attributes of these trials influence participants strategy-choice. Additionally, a post-task questionnaire shows a partial disassociation between navigation behaviors in the virtual environment and navigation in daily life. It is proposed that this dissociation can be explained by differences in environment features. This study has unique potential to advance understanding of factors that affect navigation strategy choice, and to inform ecological validity of the Dual Solution Paradigm and other navigation paradigms.