

Sex Differences in Virtual Navigation Influenced by Scale, Visual Cues, Spatial Abilities and Lifetime Mobility

Lace Padilla

Department of Psychology, University of Utah, Salt Lake City, Utah, USA

Sarah Creem-Regehr

Department of Psychology, University of Utah, Salt Lake City, Utah, USA

Jeanine Stefanucci

Department of Psychology, University of Utah, Salt Lake City, Utah, USA

Elizabeth Cashdan

Department of Anthropology, University of Utah, Salt Lake City, Utah, USA

Abstract: There are mixed findings with respect to individual or gender differences in virtual Morris water maze tasks, which may be attributed to variations in the scale of the space, the cues provided, and differences in spatial navigation experience and abilities. We explore the question of scale and context by presenting participants with either a large (146 m) or small (36 m) outdoor virtual Morris maze, along with a measure of lifetime mobility and mental rotation skills. Results of this study suggest that, for the small-scale environment, males and females performed similarly when asked to navigate with only close visual cues. However, males outperformed females when only far cues were visible. In the large-scale environment, males outperformed females in both cue conditions. Additionally, mental rotation abilities predicted better navigation performance with close cues only. Finally, we found that highly mobile females and males perform equally well when navigating with close cues.