

UC Merced

Proceedings of the Annual Meeting of the Cognitive Science Society

Title

Video game experience mediates sex differences in spatial and navigation abilities

Permalink

<https://escholarship.org/uc/item/3kn8263f>

Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 47(0)

Authors

Ziv, Zoe

Hegarty, Mary

Publication Date

2025

Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

Peer reviewed

Video game experience mediates sex differences in spatial and navigation abilities

Zoe Ziv

University of California, Santa Barbara, Santa Barbara, California, United States

Mary Hegarty

University of California Santa Barbara, Santa Barbara, California, United States

Abstract

Past research reveals sex differences in spatial ability measures. This study further examines this variation across a comprehensive range of spatial tasks and explores potential mediators. 259 participants completed psychometric measures, questionnaires, and navigation tasks in immersive and desktop virtual reality. Men performed significantly better on both small- and large-scale spatial tasks. Video game experience (greater in men) mediated sex differences on most spatial tasks. However, spatial anxiety and motion sickness (greater in women), and exploration tendencies and risk-behavior (greater in men), generally did not account for this variation. This study reveals significant sex differences across spatial navigation tasks and provides preliminary evidence that experiential factors contribute to this variation. This research has implications for everyday navigation and the effects of technology use (video game experience) on spatial performance.