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Proceedings of the Annual Meeting of the Cognitive Science Society

Title

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Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 45(45)

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Publication Date

2023

Peer reviewed

What cognitive biases impact north pointing accuracy when nearby roads are not aligned with the cardinal directions?

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Abstract

When pointing toward north in familiar environments, people tend to point parallel or perpendicular to roads suggesting that individuals may point toward north more accurately when nearby roads are coincidentally aligned with the cardinal directions (Brunye et al., 2015). To further test this, we investigated north pointing at Texas A&M University, which is misaligned with cardinal directions by 45 degrees. In this environment, pointing parallel or perpendicular to the roads could bias north pointing away from north. In an experiment, 126 undergraduates completed familiarity with campus and sense-of-direction surveys. Participants walked to one of eight predetermined locations and pointed north, which was recorded using a compass application. Participants tended to point northwest, which was often parallel with nearby roads, and pointing accuracy was related to campus familiarity and sense-of-direction. These findings contribute to a further understanding of how individuals make spatial decisions across various environments.