

# Rolling Down South: A Topographical Heuristic Guiding Navigation

**Stephanie A. Gagnon**

Tufts University U.S. Army NSRDEC

**Tad T. Brunye**

Tufts University U.S. Army NSRDEC

**Holly A. Taylor**

Tufts University

**Abstract:** We use many strategies to efficiently navigate through our environment, such as selecting routes based on a minimization of number of turns, number of landmarks, and angular deviation from a goal destination. Additionally, recent research indicates a southern preference in route planning, which may derive from a spatial heuristic that links cardinal north with higher elevations (the north-is-up heuristic; Brunye et al., 2010). In two experiments we used an adapted Implicit Association Test (IAT) to measure the possibility that participants automatically associate high and low elevation with attribute representations of north and south. Our results provide unique evidence for an implicit association between north/south and high/low elevation (respectively), demonstrating a heuristic that biases decision-making during navigation. Given the powerful influence of heuristics during spatial decision-making, these results carry implications for successfully predicting behavior in many applied contexts, including computational modeling of human behavior and developing algorithms for robotic navigation.