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Sex Differences in Mental Rotation Performance: The Self-fulfilling Prophecy of Gender Stereotypes

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Abstract: Male advantage on spatial tasks may be explained in part by gender stereotypes (Nash 1975). The current study investigated the effect of awareness of sex differences in mental rotation on mental rotation (MR) performance. We hypothesized that students with negative stereotypes would score significantly lower than students who were unaware or held positive stereotypes. Participants – 285 undergraduates — completed the Shepard & Metzler (1971) MR task followed by a short online survey. Preliminary analysis revealed a significant sex difference in mental rotation performance $F(1, 256) = 9.68, p = .002$. There was no main effect of awareness on MR performance. Interestingly, there was a significant interaction between sex and awareness on MR performance, $F(1, 256) = 6.77, p = .010$. Results on the role of awareness in cognitive strategy selection will be presented. By understanding gender stereotypes associated with spatial ability, we can reduce the gender gap found in STEM disciplines.