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Strategy differences do not account for gender difference in mental rotation

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Abstract: The Mental Rotations Test (Vandenberg & Kuse, 1978) consistently produces large gender differences favoring males (Voyer, Voyer, & Bryden, 1995). This test requires participants to select two of four answer choices that are rotations of a probe stimulus. The incorrect choices (i.e., foils) are either mirror reflections of the probe or structurally different. Two experiments investigated the hypothesis that males notice structural differences more than females and a strategy of capitalizing on structural differences, accounts for the gender difference. Trials with structurally different foils showed higher accuracy and faster reaction times for both males and females. A significant male advantage was found for both foil trial types; however, an interaction between trial type and gender was not present. Moreover, males and females did not differ in reaction time. Thus, no evidence was found to suggest that strategy differences account for the large gender difference in mental rotation tasks.