Finger Gnosis And Symbolic Number Comparison as Robust Predictors of Adult Numeracy

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Abstract: Finger gnosis and magnitude comparison were examined as predictors of adult numeracy. Previous findings were extended by (1) controlling for domain-general comparison processes (using a luminance judgment task), (2) controlling for visuo-spatial memory, and (3) examining the robustness of the relations across different numeracy tests, including exact and approximate calculations. Control variables were entered in the first step of a multiple regression, with finger gnosis and magnitude comparison entered as a second step. Finger gnosis and symbolic magnitude comparison predicted unique variance in adults' calculation fluency, computational estimation, and Woodcock Johnson calculation scores. The control variables, luminance comparison and visuo-spatial memory, did not account for significant variance in the numeracy outcomes, nor did non-symbolic magnitude comparison. These findings suggest that (1) the relation between finger gnosis and numeracy does not reflect visuo-spatial memory and (2) the relation between magnitude comparison and numeracy reflects number representations, rather than domain general processes.