Getting what you Ordered: Symbolic and Non-Symbolic Ordinality as Predictors of Exact and Approximate Calculation in Adults

Rylan J. Waring
King's University College at Western University, London, Ontario, Canada

Marcie Penner-Wilger
King's University College at Western University, London, Ontario, Canada

Abstract: Performance on symbolic and non-symbolic numeric order determination tasks was examined as predictors of Woodcock Johnson calculation (exact) and computation estimation (approximate) scores among university aged adults. For Woodcock Johnson scores, only the symbolic task variant was found to be a significant predictor of performance outcomes after entering both task variants into a multiple regression. For the computational estimation task, both symbolic and non-symbolic task variants were significant predictors of performance outcomes. However, when controlling for general math ability (using Woodcock Johnson scores in the first step of a multiple regression), only the non-symbolic task variant remained predictive of computational estimation scores. Predictors remained significant for each outcome measure after controlling for non-numerical (luminance) order determination tasks through regression. These findings suggest that 1) the relations are due to numeric (not general order) judgements, and 2) both symbolic and non-symbolic task variants are related to specific mathematical outcome measures.