

**ZMATH 2013b.00208**

**Tucker-Drob, Elliot M.; Harden, K. Paige**

**Learning motivation mediates gene-by-socioeconomic status interaction on mathematics achievement in early childhood.**

Learn. Individ. Differ. 22, No. 1, 37-45 (2012).

Summary: There is accumulating evidence that genetic influences on achievement are more pronounced among children living in higher socioeconomic status homes, and that these gene-by-environment interactions occur prior to children's entry into formal schooling. We hypothesized that one pathway through which socioeconomic status promotes genetic influences on early achievement is by facilitating the processes by which children select, evoke, and attend to learning experiences that are consistent with genetically influenced individual differences in their motivation to learn. We examined this hypothesis in a nationally representative sample of approximately 650 pairs of four-year old identical and fraternal twins who were administered a measure of math achievement, and rated by their parents on a broad set of items assessing learning motivation. Results indicated a genetic link between learning motivation and math achievement that varied positively with family socioeconomic status: Genetic differences in learning motivation contributed to math achievement more strongly in more advantaged homes. Once this effect of learning motivation was controlled for, gene-by-socioeconomic status interaction on math achievement was reduced from previously significant levels, to nonsignificant levels.

*Classification:* C31 C32 C61 C62 C21 C22

*Keywords:* twins; socioeconomic status; mathematics achievement; learning motivation; genetics; young children; academic achievement; learning experience; individual differences; measures (individuals); parent attitudes; family characteristics; advantaged  
doi:10.1016/j.lindif.2011.11.015