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TITLE: Genetic and Environmental Influences on Non-Ability-Based Confidence

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ABSTRACT: Non-ability-based confidence is the extent to which an individual's confidence is not calibrated to their ability. Many people misperceive their abilities in some area of their lives and have more or less confidence than their abilities reflect, leading to differences in competitiveness, persistence, and perceived prestige. Despite the ubiquity and consequential nature of non-ability-based confidence, there is relatively little research on its correlates. In this study, we use the Texas Twin Project, a cross-sectional, genetically informed dataset of 3<sup>rd</sup> to 8<sup>th</sup> grade children ( $N = 1588$  individuals,  $N = 814$  sibling pairs) to investigate non-ability-based confidence. Non-ability-based confidence was assessed using self-reported intellectual self-concept and standardized measures of crystallized intelligence, fluid intelligence, and processing speed. First, we find that non-ability-based confidence is strongly positively correlated with need for cognition, mastery goal orientation, grit, openness to experiences, and emotional stability. Then, we decompose non-ability-based confidence into its genetic and environmental

components and find that it is 15-28% heritable with the remaining variance primarily due to the nonshared environment. Finally, we find that genetic factors account for approximately 59% of the association with other personality measures. Non-ability-based confidence is present in early childhood and shares developmental inputs with a variety of psychological characteristics due to both genetic and environmental processes.

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