

Born to Lead?

A Twin Design and Genetic Association Study of Leadership *

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Abstract

Leadership has inspired a large cross-disciplinary literature. A perennial question is whether leaders have innate characteristics that differentiate them from followers in politics, business, and other spheres of society. Following the role occupancy model of leadership, we use newly available data from the National Longitudinal Study of Adolescent Health (Add Health) to measure the supervisory role of individuals in their work environment. To gauge the relative influence of genetic variation we employ twin design methods on 560 twin-pairs and estimate the heritability of leadership behavior to be 24%. Twin studies, however, do not provide insight into which specific genes are involved. Using all available genetic markers we show that leadership is associated with **rs4950**, a single nucleotide polymorphism (SNP) residing on the neuronal acetylcholine receptor gene *CHRNA3*, and we replicate this genetic association on an independent sample in the Framingham Heart Study. This is the first research to identify a specific genotype that is associated with the tendency to take on supervisory roles, and it suggests specific personality traits like impulsivity and patience should be investigated as potential mediators that link genes to leadership.

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