

Genetic and Environmental Influences on Status-related Outcomes in the Early Lifecourse

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Abstract

We use DeFries-Fulker (1985) (DF) analysis with data on 1,576 pairs of variously-related young adult siblings (MZ twins, 200 pairs; DZ twins, 324 pairs; full siblings, 639 pairs; half siblings, 213 pairs; cousins, 68 pairs; and nonrelated siblings, 132 pairs) to estimate univariate quantitative genetic decompositions for 15 status-related (educational and socioeconomic) outcomes roughly ordered along the early life course: PPVT score, GPA, College plans, HS graduation, Some college, College graduation, Graduate school, Educational attainment, Occupational education, Occupational wages, Personal earnings, Household income, Household assets, Home ownership, and Subjective social status, with and without fixed effects (FE) controls for age, female gender, and race/ethnicity (black, Hispanic, other; reference white). We also compute a measure of familiarity (half the heritability plus the shared environment) that reflects predicted resemblance between ordinary siblings on the trait. We find that: (1) The shared environment plays a substantial role in some life course outcomes, such as Educational attainment, College plans, PPVT score and Some college. However in all outcomes (except Home ownership) genes play a more important role than the shared family environment, and the aetiology of some outcomes (such as College graduation, Occupational wages, Personal earnings, and Subjective social status) is predominantly genetic. (2) FE controls do not affect estimates of heritability (a^2), but significantly decrease estimates of the shared environment (c^2), and significantly increase the nonshared component (e^2). (3) Fixed effects exhibit systematic patterns: (a) Age has significant small negative effects on GPA and College plans, but positive effects on several later socioeconomic outcomes. (b) Female gender is associated with a slight disadvantage in PPVT score, substantial advantage in all the educational outcomes, and a disadvantage in some of the economic outcomes such as Occupational wages and Personal earnings. (c) Black race is associated with significant disadvantage across all outcomes, except College plans and Graduate school. Hispanic ethnicity is associated with significant disadvantage in all educational outcomes and in Home ownership, but not associated with other socioeconomic outcomes. Other race/ethnicity exhibits an irregular pattern of effects. (4) Both a^2 and c^2 decrease, and e^2 increases, with the position of an outcome later in the life course, resulting in a trend of declining familiarity with life course position. (5) c^2 represents a significantly greater share of familiarity for outcomes related to formation of the family (Household income, Household assets, Home ownership), although familiarity is typically low for these outcomes, than for outcomes that are not so related; this pattern may indicate non-monotonicity in the effect of the shared environment over the life course, with a recrudescence of non-genetic influences of the family of origin during the period of family formation.