Personality, early childhood development and the labor market

Nicole Smith
Research Professor and Senior Economist
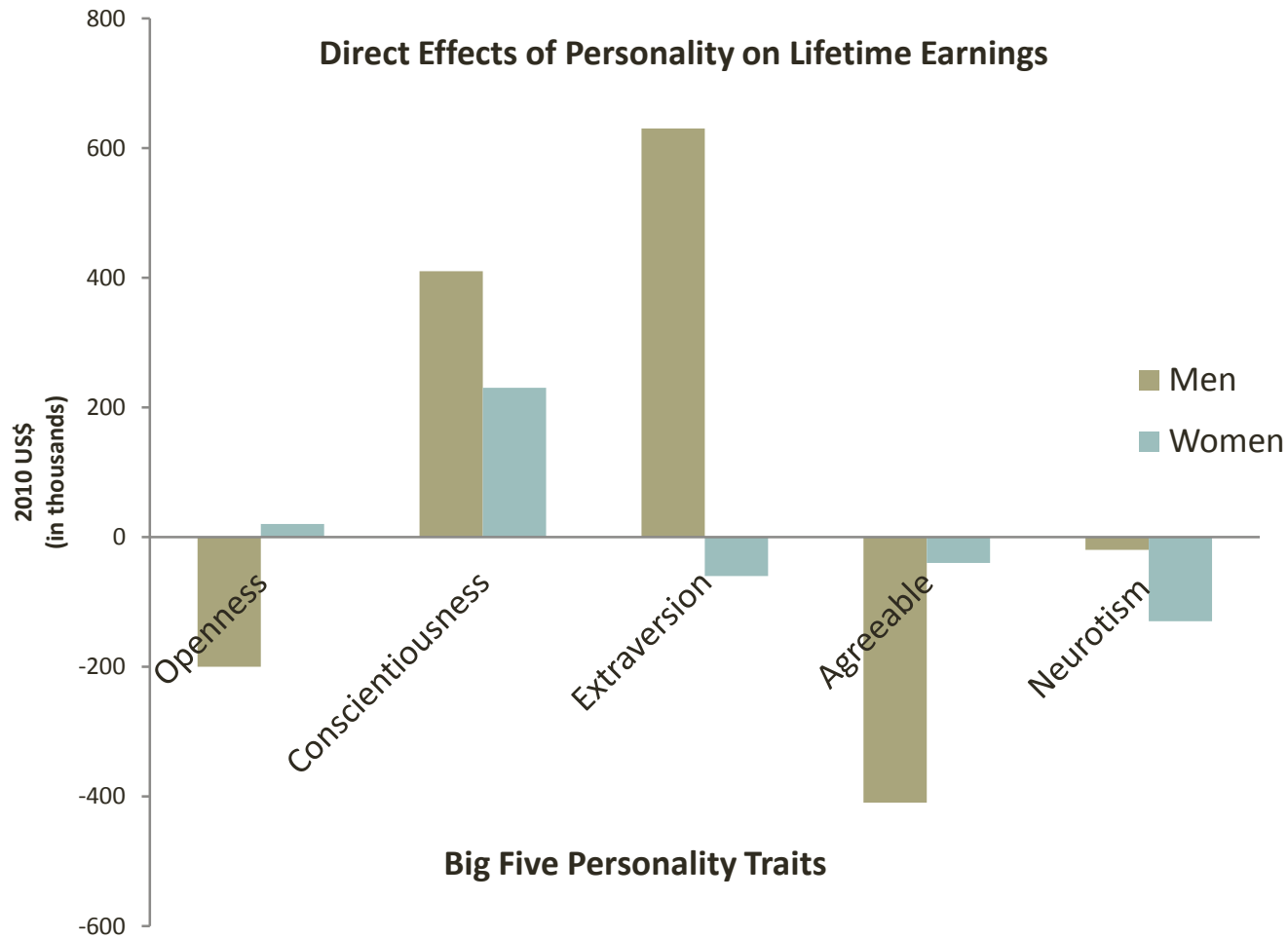Georgetown University Center on Education and the Workforce

Personality

Predicts
- occupation selection (Filer, 1986);
- job performance (Ones et al., 1993; Judge et al., 1999),
- academic success (Poropat, 2009).

- The BIG five (Digman, 1990; McCrae and Costa, 2008)
- Openness to Experience (O),
- Conscientiousness (C),
- Extraversion (E),
- Agreeableness (A), and
- Neuroticism (N);

Extraversion is a desirable trait leading to highest gains in lifetime earnings---if you're male. This trait works negatively for women

Direct Effects of Personality on Lifetime Earnings

Chart showing the direct effects of Big Five Personality Traits on lifetime earnings (2010 US$, in thousands) for Men and Women:
- Openness: Men approximately -200, Women approximately +20
- Conscientiousness: Men approximately 410, Women approximately 230
- Extraversion: Men approximately 630, Women approximately -60
- Agreeable: Men approximately -410, Women approximately -40
- Neurotism: Men approximately -20, Women approximately -130

How much does Personality pay?

- Cunha, Heckman, and Schennanch (2010) show that 12% of the variance in educational attainment is explained by personality measures (compared to 16% accounted for by cognitive ability measures).

- Almlund et al. (2011) survey the emerging literature and suggest that conscientiousness is the most predictive personality trait for educational attainment, achievement, and job performance, and most personality measures are related to sorting into occupations.

- Goldberg et al (1998) and van Eijck and de Graaf (2004) show negative correlations between neuroticism, extraversion, and agreeableness and educational attainment.
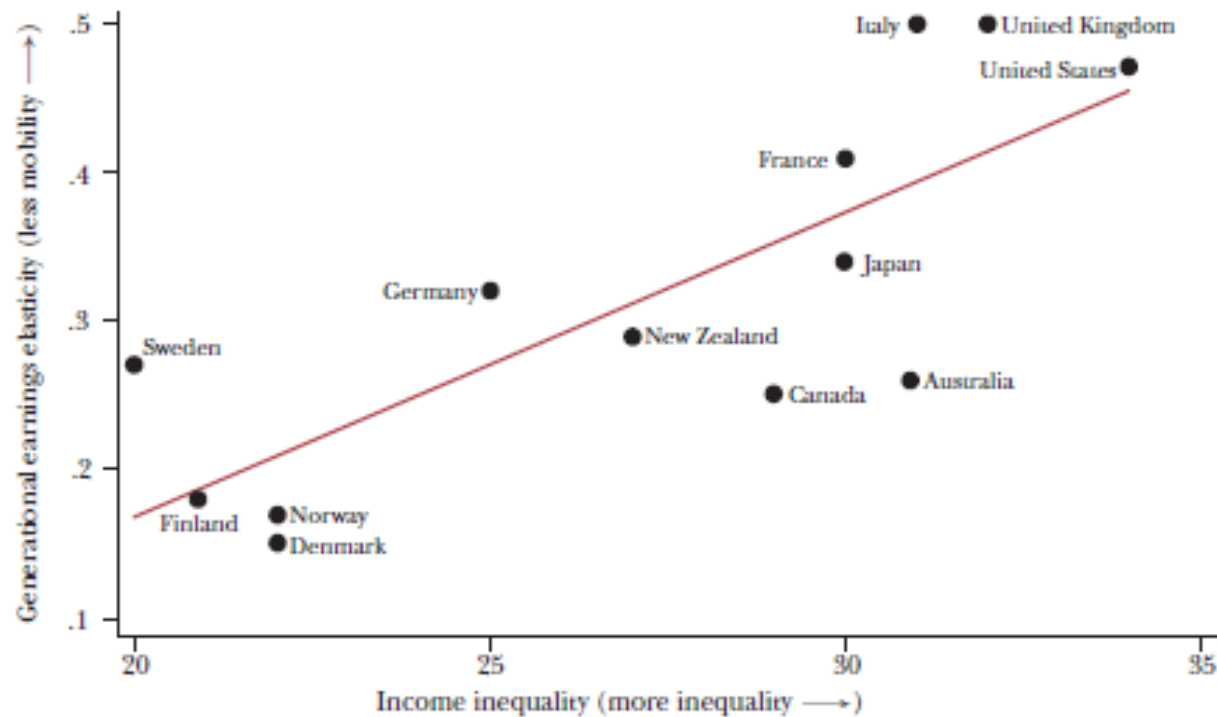
Summary

- Personality and soft-skills matter.
- Personality matters, and is both influenced by, as well as it conditions the non-cognitive.
- Non-cognitive skills can be taught.
- Best done in early childhood programs.
- Workforce outcomes, education outcomes, lifetime earnings outcomes from early childhood intervention programs are substantial.
- Public policy can either accentuate or dampen the influence of initial labor market inequalities.
- Public policy designed to alleviate disparities and promote equity should also recognize the benefit of operating outside of purely cognitive channels.

Why do we care?

- Upward mobility
  - Class is a powerful determinant of life chances
  - Inequality begets immobility (The Great Gatsby Curve)

- Though education is the great equalizer
  - Need to unlock underlying parameters that determine economic success
  - Can non-cognitive substitute for the cognitive?

Current education infrastructure reinforces social disparities

The Great Gatsby Curve: More Inequality is Associated with Less Mobility across the Generations

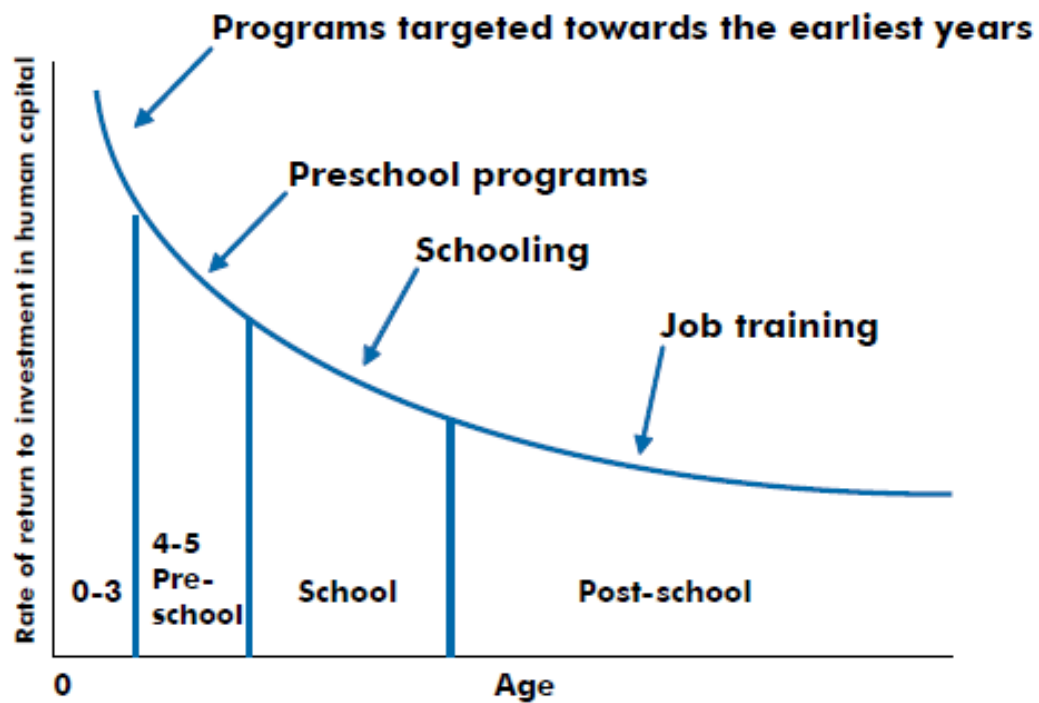*Source:* Corak (2013) and OECD.

World is constantly changing

1. 50% of the variation in lifetime earnings income is established by the time a person is 18 years old.
2. There is a turning point in the development of personality – estimated at around age 30.
3. The heredity of non-cognitive skills is a function of socioeconomic status.

Age-related ROI in education

Returns to a Unit Dollar Invested

(a) Return to a unit dollar invested at different ages from the perspective of the beginning of life, assuming one dollar initially invested at each age

Soft skills can be taught: the US experience

- Perry Preschool Program, was a randomized, enrichment intervention for disadvantaged young children, has had major effects on life outcomes, measured through age 40, by fostering non-cognitive skills such as the ability to plan and execute plans and self-control, rather than measures of IQ (Heckman, Malofeeva, Pinto et al. 2010).
  - An estimated rate of return (the return per dollar of cost) to the Perry Program is in excess of 14 percent (Heckman, Moon, Pinto, and Yavitz (2008)).

Soft skills can be taught: the Jamaican experience

- Paul Gertler, James Heckman, Rodrigo Pinto, Arianna Zanolini, Christel Vermeersch, _Susan Walker, Susan M. Chang_, Sally Grantham-McGregor. (June 2013)

- Significant earnings effects 20 years later after initial intervention in psychosocial stimulation to stunted Jamaican toddlers living in poverty.

- 42% increase in average earnings

- Comparable wages with non-stunted comparison group

Methodological concerns

- Measurement captures a composite of latent traits
- Latent traits can appear statistically valid but are only mere proxies for the true underlying characteristic
- Heckman develops a framework for testing for correlation between factors across different constructs
- Measurement of these latent factors may be corrupted by "faking"
- Reverse causality between personality measures and outcomes
- Markov chain Monte Carlo (MCMC) simulations…
  - A stochastic simulation technique for computing inferential quantities.