Addleton Academic Publishers
Economics, Management, and Financial Markets
Volume 9(1), 2014, pp. 160–165, ISSN 1842-3191

THE INTERFACE BETWEEN PERSONALITY PSYCHOLOGY AND EDUCATION ECONOMICS

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ABSTRACT. The aim of the present study is to examine and evaluate the relationship between personality and outcomes, dimensions of personality that influence the acquisition of skills and knowledge, and the effects of personality traits on socio-economic outcomes. The theory that I shall seek to elaborate here puts considerable emphasis on cognitive ability as a powerful predictor of economic and social outcomes, the relationship of personality measures with years of schooling, and the validation of intelligence and personality measures in psychology.
JEL Codes: H75; P36; D03

Keywords: psychology; personality; economics; education; outcomes; cognitive

1. Introduction

I am specifically interested in how previous research investigated the implications of behavioral economics for analyzing the benefits and costs of social policies and programs, the power of personality in predicting life outcomes, and the importance of cognitive and personality traits on outcomes. The purpose of this study is to examine the power of standardized achievement tests to predict later academic and occupational outcomes, the relevance of personality to economics, and the stability of personality traits over the life cycle. The literature on the relevance of economics to personality psychology, the predictive power of personality on outcomes, and the psychological foundations of behavioral economics is relevant to this discussion.

2. The Psychological Foundations of Behavioral Economics

Personality is a *strategy function* for responding to life situations (personality traits produce measured personality as the output of personality strategy functions). Personality is a system of behaviors, thoughts, and feelings that

emerge from the interacting components. Psychologists use measurements of the performance of persons on tasks or in taking actions to identify personality traits and cognitive traits. Personality traits are not merely situation-driven ephemera. Both cognitive and personality traits evolve over the life cycle at different rates at different stages. Measured personality is a response function using an economic model of preferences, expectations, and constraints. Personality is a response function mapping variables that characterize traits (Nica, 2013a) and situations to manifest (measured) personality. The scores on achievement tests depend on cognitive and personality measurements (Florescu, 2013), with a substantial predictive role for personality measures. Personality psychology considers both universal traits and individual differences, and examines the ways in which people are unique (personality psychology considers cognitive functioning as one aspect of personality). Cognitive activities help to determine measured personality. Personality is a property of a system of equations, whereas measured personality is the output of those equations. Personality traits need to be distinguished from the full expression of personality, which is generated by the traits interacting with other factors. (Almlund et al., 2011)

Keynes's work emphasizes the importance of psychological factors in human decision-making: Keynes focuses on the importance of psychological propensities in analyzing the economic consequences of human behavior, refuses the imposition of rationality (i.e. obeying some specific axioms of choice) as the decisive criterion of human behavior, and is conscious about the necessity to incorporate realistic behavioral assumptions in economic theories that deal with judgment under uncertainty. The aggregate behavior of the economy cannot be reduced to a sum of individual behaviors. In situations of fundamental uncertainty, people rely on a series of conventional behaviors to make decisions and base their actions. Average opinion and judgment, as expressed in current market prices and quantities, is a focal point helping solve the coordination problem of investment decisions. Conformity is an important aspect of convention formation when uncertainty is involved. The "degree of confidence" is important for the determination of *long-term expectations* (it is part of human nature to be overconfident). The need for action compels us to adopt certain behaviors wherein utter doubt, precariousness, hope and fear play a fundamental role. The aggregate behavior of advanced capitalist economies is prone to financial instability and crises. (Pech and Milan, 2009)

3. The Relevance of Economics to Personality Psychology

Measurements and behaviors that arise from responses to incentives and interactions with culture infer personality traits and abilities. For many outcomes, measured personality traits are as predictive, or more predictive, than standard

measures of cognition. Measured personality traits are as heritable (Georgescu, 2010) as cognitive traits. Alterations in brain structure and function through accidents, disease and by experiments affect measured personality. Cognitive and personality traits affect earnings capacity (Tsogas, 2013) because they enhance productivity. Certain psychopathologies are associated with extreme levels of traits that are quite productive at normal levels. People have different personalities depending on their trait endowments, constraints, and situations, whereas their actions constitute the data used to identify the traits. Personality may be "enduring patterns of thoughts, feelings and behaviors" that reflect tendencies of persons to respond in certain ways under certain circumstances. Traits evolve as part of an exogenous maturation process. (Almlund et al., 2011)

Few aspects of human behavior are devoid of cognition. Measurements of cognitive ability are affected by personality factors. Personality traits are defined as patterns of thought, feelings, and behavior (it is possible to conceptualize and measure personality traits), and may reflect the outcomes that they are alleged to predict. There is value in knowing which personality traits are most important in predicting outcomes. Certain personality traits are more malleable than cognitive ability over the life cycle. Both cognitive ability and personality traits predict a variety of social and economic outcomes. The development of cognitive ability is influenced by personality traits such as curiosity, ambition, and perseverance. Both cognitive ability and personality traits predict important outcomes (personality traits are important in explaining performance in specific tasks), evolving over the lifecycle to different degrees and at different stages of the life cycle. Measurements of cognitive ability (Miguez and Sztulwark, 2013) are affected by the environment, including incentives and parental investment. Executive function is a collection of behaviors thought to be mediated by the prefrontal cortex. The proliferation of personality measures reflects the more heterogeneous nature of personality in comparison to cognitive ability. (Borghans et al., 2008)

The central concern of tax policy is understanding how taxes matter for welfare in order to better design taxes that are maximally efficient and equitable. Behavioral economics changes standard conclusions about the usefulness and effectiveness of taxes as elements of policy. How people respond to taxes is less straightforward than the standard model supposes. The usual assumptions about how individuals form and express preferences (Hunter, 2013) are not accurate representations of how individuals in fact think and choose. The standard assumptions are so consistently violated as to be neither literally true nor useful as modeling assumptions, whereas people violate those assumptions in identifiable and predictable ways. Individuals are not especially good at choosing optimally: individuals seem to find it hard to know what is optimal, and are not effective optimizers because they seem to

find it hard to do what is optimal. Welfare results depend on how individuals respond to taxes. Behavioral economics leads to a rethinking of tax simplicity. Imperfectly rational individuals can no longer be assumed to perceive taxes correctly. Salience effects are present with respect to both commodity and labor taxes. Individuals are not, in practice, perfectly self-interested, caring about the welfare of others and the fairness of the process that generates outcomes. The use of taxes to achieve fiscal policy ends is a good example of using taxes as a tool of policy. Deviations from the standard model of behavior have implications for understanding the macroeconomics of policies. Behavioral economics does not provide firm answers for how tax policy should best reflect the fact that individuals are not perfectly rational. (Congdon, Kling, and Mullainathan, 2009)

4. The Predictive Power of Personality on Outcomes

The proliferation of personality measures reflects the more heterogeneous nature of personality in comparison to cognitive ability. The shared variance in mental disorders and personality traits is predominantly genetic (Bacalu, 2013), common genetic antecedents giving rise to certain mental disorders and personality traits. Extrinsic incentives can substantially improve performance on tests of cognitive ability. Knowledge and specific complex skills (Makó and Mitchell, 2013) depend on fluid intelligence and on the cumulative investment of effort and exposure (Peters, 2013) to learning opportunities. Personality traits and incentives can affect standardized achievement tests that are commonly used as proxies for pure intelligence. Measured personality is generated by underlying preference parameters and constraints. Agents act based on both preference parameters and productive traits that embody constraints. One way of incorporating personality into preferences is by modifying functional forms. Additively separable specifications of preferences *impose* observational equivalence between risk and social preferences. People are different at a basic level, since preferences govern the choices that shape life. Personality can affect performance on tests of fluid intelligence. Many personality traits are conceptually and empirically easily distinguished from general cognitive ability. Human ability entails more than intelligence, and personality traits have independent predictive power from standard measures of intelligence. Like adult personality, temperament is partly heritable, and both adult and child measured traits are affected by the environment. Temperamental differences observed during the preschool years anticipate adult personality and interpersonal functioning. (Almlund et al., 2011)

Like adult personality, temperament is partly heritable, and both adult and child measured traits are affected by the environment. Compared to adults, there are fewer ways that young children can differ from one another. When

measuring cognitive and personality traits (Manolache, 2013), one should standardize for incentives and environment. Extrinsic incentives can substantially improve performance on tests of cognitive ability. Future rewards are discounted non-exponentially as a function of delay. The inverse relationship between discount rates and intelligence is not just an artifact of measurement. The risk preference parameter represents the curvature of the utility function. Time preference describes the devaluation of rewards as a function of their delay (risk preference describes the devaluation of rewards as a function of their *uncertainty*). Preferences are best measured in ways that do not require a high level of numeracy. The effects of numeracy and intelligence are root explanations for behavior (Nica, 2013b) in the face of uncertainty. Self-report measures of personality have higher predictive validities for outcomes. Most omnibus measures of personality include scales closely related to preference for leisure. Measuring altruism (i.e., the preferences of one agent depend on the consumption or utility of other agents) entails tracing links between multiple agents typically followed over time (it is difficult to use laboratory experiments to isolate altruism). (Borghans et al., 2008)

Behavior permeates each step of a benefit-cost analysis (Popescu, 2013), and influence how policy decisions are made and how the public perceives the impacts. Benefit-cost analysis should attempt to describe individual preferences. The value of the benefits of social programs frequently cannot be fully captured by directly referencing market behavior. Behavioral economics provides insight into how discounting affects individual choices. Time can influence the value of costs and benefits. The values to be counted in the benefit-cost analyses are those held by the individuals who bear its costs and/or receive its benefits. Thoughtful and well-informed preferences are desirable when valuing outcomes in policy analysis. (Robinson and Hammitt, 2011)

5. Conclusions

The results of the current study converge with prior research on the interaction between cognition and preference parameters, the effects of personality and cognition on a variety of outcomes, and Keynes' analysis of individual economic behavior. The paper generates insights about the predictive power of personality traits for educational outcomes, the evolution of preference parameters and personality traits over the life cycle, and the implications of behavioral economics for public policy.

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