Early predictors of trait extraversion in adulthood: Findings from a nationally representative sample

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ABSTRACT

In total, 5663 participants provided information on family social background measured at birth; family social life at age 7 years; childhood intelligence, childhood speech difficulties and oral ability assessed at 11 years; leisure activities (parties and sports) measured at age 16 years; optimism and educational qualifications measured at 33 years; occupational levels at 42 years; and trait Extraversion measured at 50 years. Parental social status, childhood social life, childhood intelligence and speech abilities, parties and sports, optimism, education and occupation were all significantly associated with Extraversion accounting for around a tenth of the variance. Structural equation modelling showed that six factors: childhood social life, childhood speech ability, parties and sports, optimism, and occupational levels were significant and independent predictors of trait Extraversion in adulthood for both men and women. Implications and limitations of the study are acknowledged.

1. Introduction

This study examined the correlates of one of the Big Five personality traits, namely Extraversion, which is perhaps the most widely understood and investigated of all personality variables. It forms the basis of nearly all personality theories and questionnaires though there are numerous differences in attempting to explain the origin and mechanism/process by which it operates (Eysenck, 1973, 1992). There also remains a big difference between those who favour a biological vs a social explanation for this, and other personality traits (Cooper, 2010).

Wilt and Revelle (2017) defined Extraversion as the tendency to experience and exhibit positive affect, assertive behaviour, decisive thinking, and desires for social attention. They note that Extraversion, like the other Big Five traits, is based in biology, develops over time according to intrinsic maturation principles, is manifested in characteristic adaptations (i.e. expressed in affective, behavioural, and cognitive tendencies), influence one's objective biography, is reflected in the self-concept, and has both adaptive and maladaptive variants (p. 57).

There has been an emphasis on the many benefits of Extraversion (self-esteem, social support, optimism) though there has been a rigorous attempt to spell out the advantages of being introverted (Cain, 2015). Furthermore, those interested in relationship between "normal" personality traits and the personality disorders have provided much

evidence for the spectrum hypothesis which suggests very high (extreme) scores on the Extraversion-Introversion dimension are related to a wide range of clinical and sub-clinical disorders (Furnham, 2018a).

Trait Extraversion has been associated with a very wide range of mental and physical states. It has been linked with behaviours as varied as crime to consumption, and sexual behaviour to social attitudes (Furnham & Heaven, 1999). For instance, Extraversion has been found to be significantly associated with psychological well-being and mental health in both East and West (Argyle, 2001; Diener, 1984; Furnham & Cheng, 1999) and positively associated with optimism and negatively associated with depression (Cheng & Furnham, 2001, 2003).

Over the years there have been comprehensive and thoughtful reviews of what we know about the trait of Extraversion (Wilt & Revelle, 2009, 2017). They acknowledge that Extraversion predicts normal and abnormal functioning across a wide range of domains from effective functioning, well-being, risk-taking and resilience. From the earliest writings and later research Extraverts have been characterised by being active, assertive, arrogant, boastful, garrulous and talkative (Wilt & Revelle, 2009). There are also a number of issues which the research has looked at such as whether it may be that Extraversion is made of two related but distinguishable facets (i.e. agentic vs affiliative; sociability vs impulsivity).

There have been a number of attempts to give a theoretical account of Extraversion including Eysenck's conditioning then arousal theory as

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well as Gray's reinforcement sensitivity theory (Wilt & Revelle, 2017) but most of the current research is on the biology, development, evolution and genetics of Extraversion (Forsman et al., 2012; Saklofske et al., 2012; Shiner & Caspi, 2003). It has been known for many years that Extraversion is moderately heritable $h^2 = 0.45$ to 0.50) with little shared environmental influence (Bouchard & Loehlin, 2001). In the past fifteen years, with the development and rigorous scientific investigations using the most advanced tools testing models in behavioural genetics, Plomin and colleagues established that with personality factors such as Neuroticism and Extraversion, 50% of variance can be explained by genetic influences (Plomin, DeFries, Knopik, & Neiderhiser, 2013). However, it is unclear which and how specific environmental and experiential factors influence the development of trait Extraversion in adulthood.

There is general agreement that Extraversion could be considered a temperament which is systematically related to a wide range of behaviours, cognitions and emotions which lead to the development of adult trait Extraversion. Thus, behaviours in childhood and adolescence could be considered as a manifestation of (and proxy for) temperament Extraversion which develops into adult trait Extraversion. As Wilt and Revelle (2009) note temperament could be thought of as a precursor of personality in a more simplified state; that it appears early in development in specific behaviours. They favour the analogy of a snowball: if personality was a snowball, temperament would be its hard ice core.

In this study, we examined a set of socio-economic and psychological factors in childhood and adulthood available in a large, nationally representative sample in the UK, exploring factors affecting trait Extraversion in adulthood. Of the many variables available we choose those that may be thought of as temperament indicators which could be thought of as early proxy measures of adult Extraversion. It is part of a systematic program of research looking at the social origins of personality (Furnham & Cheng, 2014a, 2014b, 2016, 2017). As far as we know there has been no other longitudinal study that has had this sort and amount of psychological and demographic data that could be used to examine the origins of trait Extraversion.

We had the option of exploring an important longitudinal data base and selecting various psychological and sociological variables that have been shown to relate to adult personality (Furnham & Cheng, 2017). Our aims was to select behaviours assessed at ages 7, 11, 16, 33 and 42 years and to see to what extent they correlated with Extraversion measured at age 50 years. Based on the literature on Extraversion we had various hypotheses:

H:1. Childhood social life such as meeting other children outside the house would be significantly and positively correlated with Extraversion in adulthood. One of the most abiding characteristic of extraverts is their sociability which is often manifest earlier in life. Many studies have shown that adult Extraversion is associated with a high motivation for social contact, intimacy and interdependence (Wilt & Revelle, 2009).

H:2. Childhood speech ability (i.e. communication success) would be significantly associated with Extraversion. It is suggested that need for social contacts drives speech ability in children and adolescence.

H:3. Parties and sports would be significantly and positively associated with Extraversion. Again, this is related to the sociability concept which predicts that attendance at social events is a good proxy for Extraversion.

H:4. Optimism would be significantly and positively associated with adult Extraversion. Another strong correlate of adult Extraversion is happiness and well-being which may be manifest in young people as optimism. Further, it could be argued that as Extraverts are more sensitive to reward than Intraverts, they should condition faster to rewarding stimuli and thus experience more positive affect (Wilt & Revelle, 2017).

H:5. Occupational levels of the participants would be significantly and positively associated with Extraversion. There is a literature on personality and occupational success which suggests a small but significant association between Extraversion and work success (Furnham, 2018b).

The data set had a number of other variables like intelligence, parental social class and education which we chose to examine though we did not develop any hypotheses. Given the large number of participants we decided to test to robustness of the findings by also doing the analyses for males and females separately and did not expect, on theoretical grounds, to detect any meaningful differences.

2. Method

2.1. Participants

The National Child Development Study 1958 is a large-scale longitudinal study of the 17,415 individuals who were born in Great Britain in a week in March 1958 (Ferri, Bynner, & Wadsworth, 2003). There were nine follow-ups. At age 11 years 14,134 children completed tests of cognitive ability (response = 87%) and teachers provided information on 13,754 children's speech ability (response = 85%). At age 16 years, 11,628 cohort members completed a measure on leisure activities (response = 83%). At 33 years, 11,142 participants provided information on their educational qualifications obtained (response = 72%) and 10,393 on optimism (response 67%). At 42 years 9592 participants provided information on their occupational levels (response = 62%). At 50 years, 8532 participants completed a questionnaire on personality traits (response = 69%). The dependent variable in this study was measured at age 50 years in 2008. The analytic sample comprises 5,663 cohort members (49% females) for whom complete relevant data were collected. Bias due to attrition of the sample during childhood has been shown to be minimal (Davie, Butler, & Goldstein, 1972; Fogelman, 1976).

2.2. Measures

1. *Family social status* includes information on parental social class and parental education. Parental social class at birth was measured by the Registrar General's measure of social class (RGSC). RGSC is defined according to occupational status (Marsh, 1986). Where the father was absent, the social class (RGSC) of the mother's father was used. RGSC was coded on a 6-point scale: I professional; II managerial/technical; IIIN skilled non-manual; IIIM skilled manual; IV semi-skilled; and V unskilled occupations (Leete & Fox, 1977). Scores were reversed in the following analyses. Parental education is measured by the age parents had left their full-time education.
2. *Family social life* was measured when cohort members were at age 7 years. Mothers answered a single-item question on how often they took their children to meet other children outside their houses (Not at all = 0, Very little = 1, Quite often = 2, Every day = 3).
3. *Childhood intelligence* was assessed at age 11 in school using a general ability test (Douglas, 1964) consisting of 40 verbal and 40 non-verbal items.
4. *Childhood speech ability* contains two single-item measures rated by school teachers when cohort members were at age 11 years: speech difficulties (Not at all = 0, Somewhat = 1, Certainly applies = 2) and oral ability (Very limited = 1, Below average = 2, Average = 3, Above average = 4, Exceptional = 5).
5. *Leisure activities* were two measures reported by cohort members at age 16 years. Going to friends' parties was a 2-item measure and Sports was a 3-item measure with the same response (No chance = 0, Hardly ever = 1, Sometimes = 2, Often = 3). Alpha for Parties = 0.62 and alpha for Sports = 0.61.
6. *Optimism* was a measure with three indicators accessed at age