



The intergenerational transmission of social advantage: Some longitudinal evidence

Journal:	<i>Journal of Education</i>
Manuscript ID	bujoe-18-0134
Manuscript Type:	Original Research Report
Keywords:	Personality, Motivation, Education, Human development, Social mobility
Abstract:	<p>Intergenerational transmission of disadvantage remains a problem despite political and educational initiatives. The current study explored the role of personality and psychosocial factors in social mobility in a survey of 383 participants (174 males and 209 females) over thirty-nine years from age 16 to age 55 years. Mother's education, optimism, extraversion, and mastery motivation were the best predictors of current socioeconomic status. A singular focus on education and academic development is not working. Instead a broader approach which includes realistic lifelong educational opportunities and an education system which enables socioemotional development as well as academic growth is recommended.</p>



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8 Abstract
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10 Intergenerational transmission of disadvantage remains a problem despite political and
11 educational initiatives. The current study explored the role of personality and psychosocial
12 factors in social mobility in a survey of 383 participants (174 males and 209 females) over thirty-
13 nine years from age 16 to age 55 years. Mother's education, optimism, extraversion, and mastery
14 motivation were the best predictors of current socioeconomic status. A singular focus on
15 education and academic development is not working. Instead a broader approach which includes
16 realistic lifelong educational opportunities and an education system which enables
17 socioemotional development as well as academic growth is recommended.
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31 Key words: Personality; Motivation; Social Mobility; Socioeconomic development.
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Introduction

The intergenerational transmission of socioeconomic disadvantage is evidentially still a problem across Organisation for Economic Cooperation and Development (OECD) countries (d'Addio, 2007; Serafino & Tonkin, 2014 despite a variety of policy initiatives in education and social welfare. Differential educational opportunity is a key factor in social mobility and evidence shows that these differences persist across generations (d'Addio, 2007; Pfeffer & Hertel, 2014; Serafino & Tonkin, 2014). Intergenerational immobility also extends to other outcomes such as occupation (Eberharter, 2013; van Houten, Gesthuizen & Wolbers, 2013), physical health (Bartley, 2012; Bhalotra & Rawlings, 2011; Coneus & Spiess, 2012; Thompson, 2014), mental health (Johnston, Schurer & Shields, 2012; Wickrama, Conger & Abraham, 2005), educational attainment (Fessler, Mooslechner & Schurz, 2012; Heineck & Riphahn, 2009; Huang, 2013), intelligence and personality (Anger, 2011; Kitamura et al, 2009), parenting style (Kitamura et al, 2009), attitudes (Dohmen et al, 2012), fear of failure (Elliott & Thrash, 2004), and internalising and externalising behaviours (Kim et al, 2009). Clearly many, if not all, of these variables are interlinked and their causal relationship needs to be more fully understood in order to bring about substantial change. In fact, the link between health outcomes, education and social welfare is inextricable and needs to be informed by comprehensive longitudinal data (Bradley & Greene, 2013; Suhrcke, & de Paz Nieves, 2011). For example, a question raised is whether parenting style and personality are mediators of social mobility (Kitamura et al, 2009). However as much of the research is cross sectional this question cannot be answered. It is only through longitudinal data that an answer can be found. While education plays an important role in social mobility, the persistence of the observed effect suggests that other factors are equally, if not more, important (Torche, 2015). Mother's educational status has been previously identified

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3 as a predictor of social mobility (Cassidy & Lynn, 1991; Currie & Moretti, 2003) but its longer
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5 term impact and the mechanisms through which it has its impact needs to be explored.
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8 There is also clear evidence that intergenerational immobility is not equally dispersed
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10 across countries but is located in specific regions or neighbourhoods (van Ham et al, 2012). The
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12 geography of intergenerational transmission of mobility indicates that immobility is very much
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14 anchored in more deprived areas and thus the real depth of the problem may be underestimated
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16 in cross national studies (Chetty et al, 2014a). These authors found that the spatial variation in
17
18 intergenerational mobility was “*strongly correlated with five factors: residential segregation,*
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20 *income inequality, school quality, social capital, and family structure*” (p.3). In a related paper
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22 (Chetty et al. 2014b) found that the level of intergenerational mobility remained stable for the
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24 1971–1993 birth cohorts in the United States, especially in comparison to the degree of variation
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26 across areas. In other words, the level of social mobility was stratified by the level of economic
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28 advantage in the areas studied. The cohort in this study is representative of a region which has
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30 experienced high levels of social and economic disadvantage as well as a period of civil unrest
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32 and conflict, making it particularly interesting in terms of how the context and human
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34 characteristics have impacted on social mobility, health and education.
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40 There is widespread agreement that real change can only be brought about by changes
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42 that improve child health, education and wellbeing (Pfeffer & Hertel, 2014; Waldfogel, 2004). A
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44 spate of reports have stated clearly that the most important factor in social mobility is what
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46 happens early in a child’s life (Department for Work and Pensions & Cabinet Office, 2011;
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48 Institute of Fiscal Studies, 2014; New Economics Foundation, 2009; Pascal & Bertram, 2013).
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50 An ESRC evidence briefing ([http://www.esrc.ac.uk/_images/health-inequalities-undermine-
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52 social-mobility_tcm8-20070.pdf](http://www.esrc.ac.uk/_images/health-inequalities-undermine-social-mobility_tcm8-20070.pdf)) highlights the link between social mobility and health and
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3 further affirms the need for early intervention. The briefing highlights the link between family
4 health behaviours and social inequality. A further briefing ([http://www.esrc.ac.uk/news-and-](http://www.esrc.ac.uk/news-and-events/publications/evidence-briefings/parenting-style-influences-child-development-and-social-mobility.aspx)
5 [events/publications/evidence-briefings/parenting-style-influences-child-development-and-social-](http://www.esrc.ac.uk/news-and-events/publications/evidence-briefings/parenting-style-influences-child-development-and-social-mobility.aspx)
6 [mobility.aspx](http://www.esrc.ac.uk/news-and-events/publications/evidence-briefings/parenting-style-influences-child-development-and-social-mobility.aspx)) highlights the role of parenting and a further briefing
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8 (http://www.esrc.ac.uk/_images/Longitudinal%20studies%20-%20development_tcm8-16794.pdf
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10) explores the essential role of longitudinal research to try and explicate the child development /
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12 social mobility link.
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19 Aims:

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21 The overall aim of this study was to explore the predictors of social mobility in a
22 longitudinal sample of participants who were initially assessed at age 16 and are now in their
23 mid-fifties.
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28 *Method*

29 Participants and Procedure

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31 This was a longitudinal study of 383 participants (174 males and 209 females) assessed at
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33 three timepoints over a period of 39 years. In 1979, all 701 15-16 year old children (347 boys
34 and 354 girls), in their 5th year of secondary schooling in 8 secondary schools in one Local
35 Education Authority area in Northern Ireland (NI), comprising approx. 43,000 inhabitants were
36 assessed. In 1986 in a follow up survey 451 of these participants (199 males and 252 females)
37 were assessed at age 23 years of age approximately. The current survey represents a second
38 follow up of 383 of these participants (see Figure 1). Questionnaires with stamp addressed
39 envelopes were sent out to participants from the original study using their original identification
40 number on the questionnaire to protect anonymity. In the 1986 survey addresses were updated
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3 held was the parental home. In the letter sent with the survey parents or others now living at the
4 address were asked to pass the survey on to the participant if they had their contact details. As
5 the study was not funded there was not available the resource to engage in a more intensive
6 search. In the end usable responses were received from 54.6% of the original sample.
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10 11 12 *Measures*

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14 The variables measured and the instruments used at each stage of assessment are listed
15 below.
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18 19 *Stage I (initial assessment at age 16 years)*

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21 1. *Demographic data:* Data was recorded on parental socioeconomic status, father
22 and mother's education level and employment status, family size (as the number of children in
23 the family), and type of school attended. Socioeconomic status was recorded as father's
24 occupation and recoded in line with the National Statistics Socioeconomic Classification (2010).
25 Parental education was scored as highest qualification and recoded in line with the International
26 Standard of Educational Classification (ISCED: UNESCO, 2011).
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36 *Intelligence:* The Abstract Reasoning Scale from the Differential Aptitude Test, a non-
37 verbal abstract reasoning test lasting 25 minutes approximately (Bennett *et al.*, 1973). Abstract
38 reasoning (or inductive reasoning) is used to test general intellect and ability to work out new
39 concepts and abstract ideas, rather than testing prior knowledge. These tests are closely
40 correlated with IQ tests, and rely upon the ability to see the underlying logic in a pattern of
41 symbols or shapes (instead of relying on words or numbers). This type of test is useful because
42 the ability to answer abstract reasoning questions is independent of educational experience and
43 cultural background, and can be used to provide an objective indication of intellectual potential.
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3 2. *Personality*: The Junior Eysenck Personality Questionnaire (Eysenck and
4 Eysenck, 1975). This test allows personality testing of the three traits of extraversion,
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6 neuroticism and psychoticism in children aged between 7-17 years of age.
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10 3. *Parental encouragement*. This was a 13-item forced-choice scale constructed for
11 the study. Items were designed to assess the amount of interest shown by parents in their
12
13 children's study behaviour. For example, "Do your parents usually check that you have done
14
15 your homework?" The scale has a Cronbach Alpha of .91.
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19 4. A crowding index was produced by dividing the number of family members by
20 the number of available bedrooms. A more crowded home environment might be considered a
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22 disadvantage.
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25 26 ***The 1986 Study***

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28 1. A personal data form requesting details of educational achievement and
29 socioeconomic status. Educational status was scored as highest qualification and recoded in line
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31 with the International Standard of Educational Classification (ISCED: UNESCO, 2011). Socio-
32
33 economic status was recorded as current occupation and recoded in line with the National
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35 Statistics Socioeconomic Classification (2010).
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39 2. *Achievement motivation*: The Cassidy-Lynn Achievement Motivation
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41 Questionnaire (Cassidy and Lynn, 1989). This is a multi-factorial measure which taps the seven
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43 factors of Work Ethic ($\alpha=.78$), Acquisitiveness ($\alpha=.74$), Dominance ($\alpha=.81$), Excellence (the
44
45 pursuit of) ($\alpha=.77$), Competitiveness ($\alpha=.92$), Status Aspiration ($\alpha=.75$) and Mastery ($\alpha=.89$).
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49 3. *Personality*: The Eysenck Personality Questionnaire (Eysenck and Eysenck,
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51 1975). This included the revised psychoticism scale (Eysenck et al., 1985). This is a widely used
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53 measure of Eysenck's 3 factor model of personality, extraversion, neuroticism and psychoticism.
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Current study

A personal data form requesting details of educational achievement and socioeconomic status. Educational status was scored as highest qualification and recoded in line with the International Standard of Educational Classification (ISCED: UNESCO, 2011). Socio-economic status was recorded as current occupation and recoded in line with the National Statistics Socioeconomic Classification (2010).

Results

As we were interested in identifying factors at age 16 and age 23 which are predictive of current socio-economic status (SES) the data was submitted to a Hierarchical Multiple regression analysis (HMRA) involving six steps as shown in Table 1. On the first step which looked at family demographics at age 16 the only significant factor was mother's education ($\beta = -.566$, $p < .001$). Higher levels of education of mothers corresponds with higher SES (SES scored as lower score equals higher status). Position in family was just about significant ($\beta = -.097$, $p = .053$). This step accounted for 32.8% of the variance in SES. The addition of crowding and parental encouragement on step two did not add to the variance explained. On step three the addition of personality and IQ added 2.3% to the variance explained with IQ ($\beta = -.101$, $p = .037$) and extraversion ($\beta = -.095$, $p < .053$) producing significant beta values. On step four educational status and SES at age 23 were added and accounted for an additional 7% of the variance. This was attributable to educational status at age 23 ($\beta = -.345$, $p < .001$). On step five personality was added increasing the variance by 2.5% with significant beta for extraversion ($\beta = .195$, $p = .003$). This suggests that lower extraversion (or higher introversion) corresponds with higher SES. On the final step the seven dimensions of achievement motivation were added and increased the

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3 variance by 7.3% to a total explained variance of 49.7%. The only significant dimension was
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5 mastery ($\beta = -.387$, $p < .001$).
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8 With each step some of the variables (e.g. family position, IQ) became non-significant
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10 suggesting that later variables were accounting for their effect. For example, with IQ, the
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12 addition of educational status at age 23 diminished its effect. Overall the variables that remained
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14 significant on the final step were mother's education ($\beta = -.233$, $p < .001$), educational status at age
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16 23 ($\beta = -.359$, $p < .001$), and mastery ($\beta = -.387$, $p < .045$). To further extrapolate we ran further
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18 HMRA firstly with mastery as the dependent variable. The model accounted for 47.5% of the
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20 variance in master with mother's education ($\beta = .207$, $p < .001$), extraversion at age 23 ($\beta = -.239$,
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22 $p < .001$), and optimism at age 23 ($\beta = .335$, $p < .001$) producing significant beta values.
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27 Finally, we looked at changes in SES across the three timepoints comparing parental SES
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29 with SES at age 23 and current SES using crosstabs to test frequencies. Comparing parental SES
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31 with SES at age 23 produced a significant relationship ($\chi^2 (49) = 173.905$, $p < .001$). Comparing
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33 parental SES with current SES also produced a significant relationship ($\chi^2 (49) = 143.703$,
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35 $p < .001$). This is illustrated in Figure 1.
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38 **Discussion**

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41 The sample upon which the current study is based can be considered relatively
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43 representative of large portions of the UK. The original sample were all of the 16 year old school
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45 children in one local education authority area representing a county town and its rural surrounds.
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47 The current sample were 54.6% of those original respondents and tests comparing them with
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49 those who did not respond to the recent study suggest that they did not differ hence the argument
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51 that they are representative of the original cohort. The sample were assessed at 16 years old, 23
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53 years old and currently aged 55 years approximately. Our interest in the data herein reported was
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3 to explore factors that might be predictive of social mobility based on current socioeconomic
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8 Based on the variables measured, it would appear, that the best direct predictors are
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10 mother's education, educational status as a young adult, and mastery as a measure of motivation.
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12 In other words, those who had a better educated mother and themselves achieved higher levels of
13 education, and who were motivated by the desire to overcome challenge (mastery), were more
14 successful in terms of the measure used. The findings show a direct link between mother's
15 education, educational status at age 23, mastery and current SES. The analysis also helps to
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17 unpick the role of mother's education which has an indirect effect through optimism,
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19 extraversion, mastery and educational status at age 23. In other words it appears that mother's
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21 with higher educational status impact their offspring's personality, motivation and educational
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23 status in early adulthood. In terms of personality more educated mothers tend to have children
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25 who are less extraverted (more introverted) and more optimistic. Their offspring are also more
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27 likely to be motivated by challenge in terms of mastery. Educated mothers impact on their
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29 offspring's educational status has been previously demonstrated (Cassidy & Lynn, 1991; Currie
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31 & Moretti, 2003). The role of IQ in the process is overshadowed by other variables including
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33 personality and motivation and while IQ is predictive of educational status at age 23, its long-
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35 term impact is better explained through the impact of the education level achieved. It would
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37 appear that once a good level of education is attained as a young adult, it is the way in which that
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39 is used through motivation to overcome challenge that impacts on SES in later life. On the other
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41 hand, IQ is predicted by mother's education, home ownership and crowding. Again those with
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43 more educated mothers exhibit higher IQ. While parental SES did not predict IQ, home
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45 ownership and crowding, both indicators of financial status, did.
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3 In regard to the question of intergenerational transmission it would appear that a
4 significant number in this sample have raised their SES above the level attained by their parents.
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6 The difference in distribution of occupational status is significant and from Figure 1 we can see
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8 that the number in higher managerial and managerial occupations is significantly higher than
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10 their parents achieved, while those in lower level occupations is consistently lower. Although
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12 these numbers are significant it must be said that there is still a consistent intergenerational trend.
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17 The evidence from this study suggests that the best predictors of breaking free of the
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19 intergenerational trend and increasing SES is to have a mother who is better educated, to do well
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21 in terms of education, and to develop a motivational style that engages with challenge in a
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23 positive way. The study is limited in terms of measures not used; for example, a more
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25 comprehensive model of personality such as the Big Five. However, some of the potential
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27 measures were not available when baseline assessment was carried out in 1979.
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31 The recommendations from our findings are fairly simple and clear. First of all
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33 opportunities for a good education are clearly important and especially so for girls. Mothers in
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35 this cohort have had an immense impact on their children's educational and socioeconomic
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37 futures, although this may be changing if in fact fathers are playing a more involved role in child
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39 rearing. The singular focus on academic attainment in our education system may be questioned
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41 as indicated by the impact of personality and motivation over and above IQ. Perhaps we need to
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43 ensure that educational experiences engender more introverts who are motivated by challenge.
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Table 1: HMRA analysis with current SES as the dependent variable

	B	Std. Error	β	Significance
	B			
	Step 1	$R^2=.328$	$f(8,374)=24.296,p=.001$	
sex	.124	.223	.024	.579
Family size	-.011	.070	-.008	.870
Family position	.131	.068	.097	.053
Family holiday	.325	.220	.062	.141
Home ownership	-.459	.244	-.079	.061
Parental SES	-.006	.047	-.006	.896
Father's education	.003	.070	.002	.965
Mother's education	-1.068	.084	-.566	.001
	Step 2	$\Delta R^2=.000$.		
sex	.120	.224	.023	.591
Family size	-.016	.077	-.012	.830
Family position	.130	.070	.096	.063
Family holiday	.303	.230	.058	.190
Home ownership	-.452	.246	-.078	.067
Parental SES	-.007	.047	-.006	.890
Father's education	.003	.070	.002	.970
Mother's education	-1.068	.085	-.566	.001
Crowding	.022	.154	.007	.887
Parental encouragement	-.009	.030	-.013	.762
	Step 3	$R^2=.023$	$f(4,368)=3.287,p=.012$	
sex	.095	.222	.018	.671
Family size	.001	.076	.001	.984
Family position	.100	.070	.074	.150
Family holiday	.291	.228	.056	.203
Home ownership	-.342	.247	-.059	.167
Parental SES	-.007	.047	-.007	.876
Father's education	-.013	.070	-.008	.854
Mother's education	-.905	.096	-.479	.001
Crowding	-.052	.154	-.016	.736
Parental encouragement	-.011	.030	-.017	.704
I Q	-.025	.012	-.101	.037
Neuroticism (age 16)	.067	.102	.031	.508
Extraversion (age 16)	.216	.111	.095	.053
Psychoticism (age 16)	.004	.043	.003	.935
	Step 4	$R^2=.07$	$f(2,366)=22.542,p=.001$	
sex	.239	.211	.046	.260
Family size	-.032	.072	-.023	.655
Family position	.086	.066	.063	.194
Family holiday	.269	.216	.052	.213
Home ownership	-.242	.235	-.042	.303
Parental SES	.034	.045	.030	.456
Father's education	.023	.067	.015	.726
Mother's education	-.623	.109	-.330	.001
Crowding	-.086	.146	-.026	.557
Parental encouragement	.003	.028	.004	.916
I Q	-.007	.012	-.028	.547
Neuroticism (age 16)	.111	.097	.051	.257

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2					
3	Extraversion (age 16)	.170	.105	.075	.107
4	Psychoticism (age 16)	.026	.041	.025	.535
5	Own SES (age 23)	-.003	.052	-.002	.961
6	Own Educational status (age 23)	-.773	.116	-.345	.001
7					
8		Step 5	$R^2=.025$	$f(4,362)=4.181$	$p=.003$
9	sex	.275	.208	.053	.187
10	Family size	-.006	.071	-.005	.929
11	Family position	.036	.066	.027	.587
12	Family holiday	.313	.213	.060	.143
13	Home ownership	-.227	.232	-.039	.329
14	Parental SES	.034	.045	.031	.447
15	Father's education	.014	.066	.009	.834
16	Mother's education	-.513	.116	-.272	.001
17	Crowding	-.100	.144	-.031	.485
18	Parental encouragement	.015	.028	.022	.590
19	I Q	.005	.012	.021	.667
20	Neuroticism (age 16)	.102	.107	.047	.344
21	Extraversion (age 16)	.015	.111	.006	.895
22	Psychoticism (age 16)	.001	.042	.001	.976
23	Own SES (age 23)	.014	.052	.012	.790
24	Own Educational status (age 23)	-.734	.116	-.328	.001
25	Neuroticism (age 23)	-.183	.150	-.085	.223
26	Extraversion (age 23)	.427	.145	.195	.003
27	Psychoticism (age 23)	.046	.060	.031	.449
28		Step 6	$R^2=.073$	$f(7,355)=7.952$	$p=.001$
29					
30	sex	.258	.198	.049	.194
31	Family size	.021	.068	.015	.752
32	Family position	.009	.062	.007	.881
33	Family holiday	.260	.201	.050	.198
34	Home ownership	-.079	.221	-.014	.722
35	Parental SES	.035	.042	.031	.409
36	Father's education	.041	.065	.026	.530
37	Mother's education	-.440	.118	-.233	.001
38	Crowding	-.089	.136	-.027	.514
39	Parental encouragement	.025	.027	.038	.341
40	I Q	.001	.012	.004	.940
41	Neuroticism (age 16)	.037	.102	.017	.714
42	Extraversion (age 16)	.137	.109	.060	.211
43	Psychoticism (age 16)	-.021	.040	-.020	.600
44	Own SES (age 23)	.036	.050	.032	.465
45	Own Educational status (age 23)	-.805	.110	-.359	.001
46	Neuroticism (age 23)	-.232	.143	-.108	.105
47	Extraversion (age 23)	.209	.141	.096	.137
48	Psychoticism (age 23)	.008	.057	.005	.896
49	Work ethic(age 23)	.112	.069	.100	.103
50	Acquisitiveness (age 23)	.002	.048	.002	.959
51	Dominance (age 23)	.063	.048	.056	.190
52	Excellence (age 23)	.017	.053	.017	.748
53	Competitiveness (age 23)	-.003	.047	-.002	.955
54	Status aspiration (age 23)	-.001	.055	-.001	.979
55	Mastery (age 23)	-.334	.046	-.387	.001
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Total $R^2=.497$

