
Personality Traits and Occupational Attainment

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Historically, sociologists have paid little attention to the role of non-cognitive characteristics in occupational attainment. This is in sharp contrast to the relatively large amount of research highlighting the importance of cognitive traits, such as IQ and educational qualifications, or characteristics related to social background, such as social class origin, sex or ethnicity. In this paper, I analyse data drawn from the British National Child Development Study (NCDS), and show that personality traits measured at childhood are a significant determinant of an individual's class destination (measured at age 42). I move on to provide a possible micro-level explanation for why personality traits should have an impact in processes of occupational and class attainment.

Introduction

Common sense tells us that non-cognitive as well as cognitive characteristics affect social and economic success. Most people assume, for example, that individuals with 'ambition', 'good attitudes', 'high aspirations', or 'good judgement' are more likely to succeed than individuals who lack these characteristics. Employers . . . reflect this belief when they seek personal interviews, letters of recommendation, and other personal evaluations, even when test scores and other measures of cognitive ability are available (Jencks, 1979: 122).

Despite this commonsense view, sociologists have paid little attention to the role of non-cognitive characteristics in occupational attainment. Instead, in trying to explain why individuals receive more or less advantageous positions in the labour market and income hierarchy, sociologists (and economists) have concentrated on the role of cognitive traits, such as IQ and educational qualifications, or characteristics related to social background, such as social class origin, sex or ethnicity. In

this paper, I will argue that non-cognitive characteristics, in particular personality traits, are important determinants of occupational attainment, and I provide a possible micro-level explanation for why this should be the case.

The effects of cognitive abilities on labour market outcomes are well-documented within the sociological and economic literature. Sociological interest has primarily been in understanding the role of education in class and status attainment.¹ For example, Blau and Duncan (1967) found that high qualifications increased the likelihood of entry into high-status occupations regardless of social origins: an individual from a low status background could move up into a high status occupation if they had the necessary educational qualifications (Blau and Duncan, 1967: 156–57; see Halsey, 1977; Featherman and Hauser, 1978 for similar results). Recent research also acknowledges that an individual's educational credentials have substantial implications for their occupational prospects: greater educational attainment increases the chances of being in a higher class or status position (Heath *et al.*, 1992; Jonsson, 1996; Marshall *et al.*, 1997; Breen and Goldthorpe, 2001; Whelan and Layte, 2002). Economists have examined the effect of education on

earnings, and find that returns to schooling are large and substantial, holding all other factors constant. Estimates suggest that each additional year of schooling increases wages by between 2.5 per cent (Miller *et al.*, 1995) and 16 per cent (Ashenfelter and Krueger, 1994) (estimates vary quite substantially between studies due to different methods of analysis and control variables).² Education is therefore an important determinant of both social and economic advantage.

Although it is important to recognise that cognitive abilities and social background have significant effects on an individual's occupational and income attainment, it is clear that other factors also have a role to play. Some of these factors, such as family background, are measured; others, such as personality traits, usually are not.³ There are few studies that examine the impact of personality traits on occupational and economic success. One reason for this might be the overwhelming influence of cognitive and social background characteristics on occupational attainment; in comparison, individual non-cognitive characteristics have only a small impact on attainment. However, I would argue that it would be a mistake to ignore non-cognitive characteristics in explanations of occupational attainment, allowing them to be simply bundled together with unknowns into an 'error term'. Rather, there are good reasons for believing that non-cognitive traits are relevant to the mechanisms by which individuals gain occupational and thus class and income positions.

Probably the most famous study of the effect of personality traits on occupational and economic attainment is Jencks' *Who Gets Ahead?* He shows that individual personality traits (or 'non-cognitive traits' as he refers to them) have an effect both on occupational status and on earnings, controlling for educational qualifications, cognitive ability and family background. This conclusion is supported by further research by sociologists and economists. Given that there are so many different measures of personality traits to be found in the literature, I will not attempt to summarise all of the main findings here⁴ (for a good summary of the findings of research examining the effect of personality traits on socio-economic outcomes for different measures see Osborne-Groves, 2005). But whether we consider an individual's self-esteem, their propensity to blame themselves rather than others for outcomes, or their openness and creativity, it seems that personality traits do have an effect on labour market success (Andrisani and Nestel, 1976; Turner and Martinez, 1977; Andrisani, 1978; Duncan and Morgan, 1981; Mulligan, 1996; Goldsmith *et al.*, 1997; Dunifon and Duncan, 1998; Cawley *et al.*, 2001; Blumberg and de

Graaf, 2004; Nyhus and Pons, 2004; Semeijn *et al.*, 2004; Osborne-Groves, 2005).

Given that personality traits have an impact on economic and occupational success, the question of why this should be so arises. I would like to argue that it is necessary to consider the micro-mechanisms governing the labour market to find an answer. In particular, the connection between the types of characteristics rewarded on the labour market and the types of characteristics desired by employers in their employees needs to be understood. Ultimately, employers get the final say about which characteristics of employees are rewarded in the labour market (Hayek, 1976; Goldthorpe 1996). If employers chose only to reward an individual's educational qualifications, for example, we would not expect personality traits to have a substantial effect on their income or class position.

Certain personality traits are rewarded on the labour market therefore because they are associated with being a better worker. Employers presumably seek to use both cognitive and non-cognitive measures when recruiting because they like to have as much information as possible about their potential employee to hand (Farkas, 2003: 553). The more information an employer has, the more likely it is that they will be able to judge whether the potential employee is suitable for the job. So why should information about personality traits allow an employer to judge whether an individual is suitable for a certain type of occupation? In the literature, two main explanations can be found. First, some personality traits may aid employers in their control of the workforce, and thus workers with these traits are rewarded. Second, the functional requirements of some occupations might be served through the employee's possession of specific types of personality traits which cannot be measured directly through cognitive abilities such as educational qualifications.

The role of employee personality traits in enabling employers to maintain control over their enterprise more effectively is summed up by Edwards, who writes:

. . . workers who behave 'properly' . . . are valuable. Workers who *habitually* do so . . . have attributes much akin to technical skills . . . Just as technical skills make possible the operation of the firm's physical technology, so these behaviour traits facilitate the firm's control and social governance (Edwards, 1976: 57).

For example, employers might like to have helpful and obedient employees, and thus the trait of conformity is rewarded through higher wages. This type of explanation is often associated with Bowles and Gintis' (1976) classic,

Schooling in Capitalist America, where attitudinal and behavioural traits of workers were argued to be important to the capitalist enterprise. In a follow-up study in 2002, they provide empirical evidence to show that attitudinal and behavioural traits *do* have a significant impact on individual earnings. In particular, they find that the estimated effect of years of schooling on income is reduced by 37 per cent once attitudinal and behavioural measures are taken into account (2002: 11).

While employers might look for workers with personality traits that make them controllable, the range of traits that are rewarded in the labour market is far broader than simple ‘conformity’ characteristics. The many different measures of personality traits discussed above have all been shown to be related to occupational and economic success, yet it would be hard to argue that all of these measures are really measures of ease of control. Given this, I would argue that it is necessary to look to the type of work being carried out within occupations in order to understand why personality traits should be rewarded. For example, in jobs within the growing services sector the whole person is on show, and increasing emphasis is therefore placed on the ‘personality package’ – how well individuals sell themselves in the market, how well they get their personality across, and whether they are ‘cheerful’, ‘sound’, ‘reliable’, and the like (Fromm, 1949; Gallie and White, 1993; Brown and Scase, 1994; Warhurst and Nickson, 2001).

There is evidence to support the view that different personality traits are important in different jobs. For example, Filer argues that sales workers are more likely to be outgoing and thick-skinned, service workers friendlier, and clerical workers willing to accept domination (1986: 422). Similarly, in a meta-analysis of 117 criterion-related validity studies of personality, Barrick and Mount find a difference in the effect of personality characteristics on entry to different types of jobs. Extraversion was found to have an impact on entry to managerial and sales occupations, but was less important for entry into skilled, semi-skilled and professional occupations. Conversely, for professional occupations, emotional stability had a negative effect on entry, such that individuals who are ‘highly-strung’ perform better (1991: 20). So, clearly, type of occupation has an important relationship with personality traits; some individuals are more likely to end up in particular occupations than others. This leads Tett *et al.* to argue that:

There is no *g* factor [i.e. a composite measure of overall cognitive ability] for personality that would allow the

relatively straightforward inference that what is required for one job is probably required for others . . . individual differences in personality pose a severe challenge to personnel decision makers, and meeting this challenge will require careful analysis of both the person and the job (Tett *et al.*, 1991: 732–33).

In the following analyses, I first examine whether personality traits affect labour market outcomes, concentrating on entry to the salariat, or middle class, and show that this is indeed the case. I then move on to consider a possible micro-level mechanism by which personality traits impact on entry to the salariat, supported by evidence that personality traits have differential effects on entry to different types of occupations within the salariat.

Data, Measures and Methodology

Data

The data in this paper are drawn from the National Child Development Study (NCDS), a nationally representative cohort study of all children born in Britain in one week in March 1958.⁵ To date, measures of the individuals have been taken at birth, and at ages 7, 11, 16, 23, 33 and 42. In this paper, I will be using measures from the sweeps taken at ages 11, 23 and 42, fitting models examining class and occupational attainment when individuals are aged 42. The NCDS is an extremely rich dataset, which provides a unique insight into the respondents’ lives. Amongst other things, information is provided on the individual’s family background, childhood, physical and emotional characteristics, education and employment history. In common with other studies of this type, sample attrition and missing data is a problem (on NCDS non-response see Hawkes and Plewis, forthcoming; on NCDS and social stratification research, see Breen and Goldthorpe, 2001). In the results section I discuss the extent of the attrition and the effect that this might have on the conclusions.

Measures

Personality Traits

I use measures of personality traits provided in the data collected at age 11. The advantage of using measures of personality traits taken at childhood to predict labour market outcomes in adulthood is that the problem of endogeneity can be avoided. That is, the measures of personality are taken long before any important decisions

about education and employment are made by the individuals concerned. So, for example, if nurses were found to be compassionate, it would be possible to argue that they were compassionate *before* they entered the nursing profession, rather than becoming compassionate as a result of being in that profession. By avoiding the endogeneity problem, the personality measures can be treated as real predictors of the labour market outcomes discussed here.

However, in the process of avoiding the endogeneity problem, another potential problem arises. How far are the personality measures taken at age 11 representative of the type of personality an individual will have throughout their lifetime? If an individual's personality can change radically between childhood and adulthood, the power of childhood personality measures in predicting adult labour market outcomes would be slight. In the psychology literature, there is some debate as to how far personality characteristics *do* change over the lifetime. Many believe that personality characteristics are at root genetic, and thus are fairly stable across the lifetime. For example, McCrae and Costa (1999) argue that, 'Traits develop through childhood and reach mature form in adulthood; thereafter they are stable in cognitively intact individuals' (p. 145). Conversely, others argue that the social environment also has an important

impact on personality traits, and that such traits *can* vary over the lifetime (see Srivastava *et al.*, 2003, for a recent discussion of the debate). Rather than getting caught up in this very sticky psychological debate, I will assume that childhood personality characteristics do bear some important relation to adult personality characteristics, and changes which occur will be small rather than substantial. Certainly, the results in the following section are consistent with this assumption, and would suggest that childhood personality traits have a steady relationship with adulthood traits.

The age 11 personality measures were taken using the Bristol Social Adjustment Guide (BSAG). The child's teachers were asked to rate them on 146 items of behaviour and attitudes; the teachers underlined all of the behaviours/attitudes which they thought that the child exhibited from the total 146⁶ (see Stott, 1971; Ghodsian, 1977: 23). These measures of behaviours/attitudes were then grouped together into 12 different 'syndromes' which can be seen as different types of personality traits (see Table 1 for the list of syndromes and examples of the behaviours/attitudes). The higher a child scores on each syndrome, the more 'maladjusted' they are. Given that these measures are designed to pick up maladjustment, one concern might be that the scores do not adequately reflect the full range of normal behaviour,

Table 1 Results of principal components analysis

	Examples of behaviour classified under the syndromes	Rotated factor loadings
<i>Aggression component</i>		
Hostility towards adults (n986)	Argumentative and antagonistic	0.80
'Writing off adults' (n989)	Untrustworthy and unconcerned with approval	0.60
Anxiety for acceptance by children (n992)	Concerned to be liked by other children	0.62
Hostility towards children (n995)	Mistreats other children	0.79
Inconsequential behaviour (n1001)	Does not pay attention in class	0.65
Proportion of variance explained		35%
Scale's Chronbach alpha		0.79
<i>Withdrawal component</i>		
Unforthcoming syndrome (n974)	Shy, lacks confidence	0.81
Withdrawal syndrome (n977)	Not sociable	0.77
Depression syndrome (n980)	Apathetic and unmotivated	0.68
Miscellaneous symptoms (n1004)	Immature	0.63
Proportion of variance explained		16%
Scale's Chronbach alpha		0.74
<i>BSAG variables excluded from factors</i>		
Anxiety for acceptance by adults (n983)		
Restlessness syndrome (n998)		
Miscellaneous nervous symptoms (n1005)		

and instead measure behaviour which is extreme enough to be seen as ‘maladjusted’. I address this problem in the results section (Figure 1).

Although the 12 different syndromes each relate to a specific type of personality trait, children who score highly on one type of syndrome would seem likely to score highly on others. So, it should be possible to allow a smaller number of variables to represent the 12 different syndromes by grouping together associated syndromes. To test whether the 12 syndrome dimensions *can* be reduced into a smaller number of underlying dimensions I now run a principal components analysis. The results of the analysis are presented in Table 1.

The principal components analysis confirms that the number of dimensions underlying the 12 syndromes can be reduced to a smaller number of dimensions represented by the principal components. The component matrix was rotated (using Varimax rotation) to provide a more easily interpretable and clear solution. Under conventional measures, three components are extracted from the analysis. However, in line with both Ghodsian (1977) and Osborne-Groves (2004), I argue that two components are the most appropriate for describing the structure of the data. First, although three components are derived, only two of these have a ready theoretical interpretation. Second, after creating scales on the basis of the components (see below), the Chronbach’s alpha for the third component scale was extremely low, at 0.36. Given these concerns, the two component solution was chosen. Unlike in Ghodsian and Osborne-Groves, the three syndromes which loaded onto the third component were excluded from the analysis, as they loaded only weakly onto the other two components. To have included these variables in the analysis by adding them into either of the other two components would have diluted these components and thus reduced their predictive power in the analyses. The two components identified explain just over 50 per cent of the variance.

The two components which are identified through the analysis have accepted theoretical interpretations, given by Ghodsian (1977). The first component may be labelled as an aggression component, that is, representing ‘anxious, aggressive, restless, outwardly expressed behaviour’ (1977: 26). The higher the individual scores on each of the variables in this component, therefore, the more aggressive they are, the lower, the more passive. The second component is labelled as withdrawal, that is, ‘anxious, withdrawn inhibited behaviour’ (p. 26). The higher the individual scores on the variables making up this component, the more withdrawn they are, the lower, the more outgoing. Having identified the two components,

I create additive scales. First, I standardise the variables so that all run from 0 to 10, where 0 represents the least maladjusted and 10 represents the most maladjusted. Second, I add the variables identified as being members of the same principal component together, and then divide by the total number of variables. Thus,

$$\text{Scale} = \frac{X_1 + X_2 \dots + X_n}{n}$$

The Chronbach’s alpha for the two scales is high; the alpha is 0.79 for the aggression scale and 0.74 for the withdrawal scale.

The scales range from a low of 0 to a high of 6.3 for aggression and 7.3 for withdrawal, although only a handful of individuals achieve scores towards the higher extreme. Given the small numbers of individuals with extreme scores, and in order not to bias the analyses, I constrain the sample to include only those with scores lower than 5. Figure 1 shows the distribution of the personality scores over the whole sample.

The mean values of the personality variables, aggression and withdrawal, are rather low, at 0.8 and 0.9 respectively, due to the number of individuals with low scores on these variables; that is, individuals who were not judged to be maladjusted by their teachers. Figure 1 somewhat confirms the worry expressed earlier that the personality measures do not adequately reflect the full range of normal behaviour. However, while the distributions of scores on the personality variables are certainly not normal, we can see that there is at least sufficient variation in these variables to justify including them in a regression model.⁷

Educational Qualifications

Information on educational qualifications was collected at age 23, and is provided in the data as the highest achieved educational qualification, coded to the 16 point scale used in Britain’s General Household Survey. This was recoded into a seven level version of the CASMIN educational scale, ranging from no qualifications (scored 1) to university degree (scored 7)⁸ (see Müller *et al.*, 1989).

Cognitive Ability

As I wish to assess the effect of personality characteristics alone, I include a measure of cognitive ability in the models as a control variable. Although Breen and Goldthorpe (2001) find that the explanatory power of models predicting class destination is only slightly improved by adding cognitive ability to a model already including educational qualifications, in this case it *is* important to

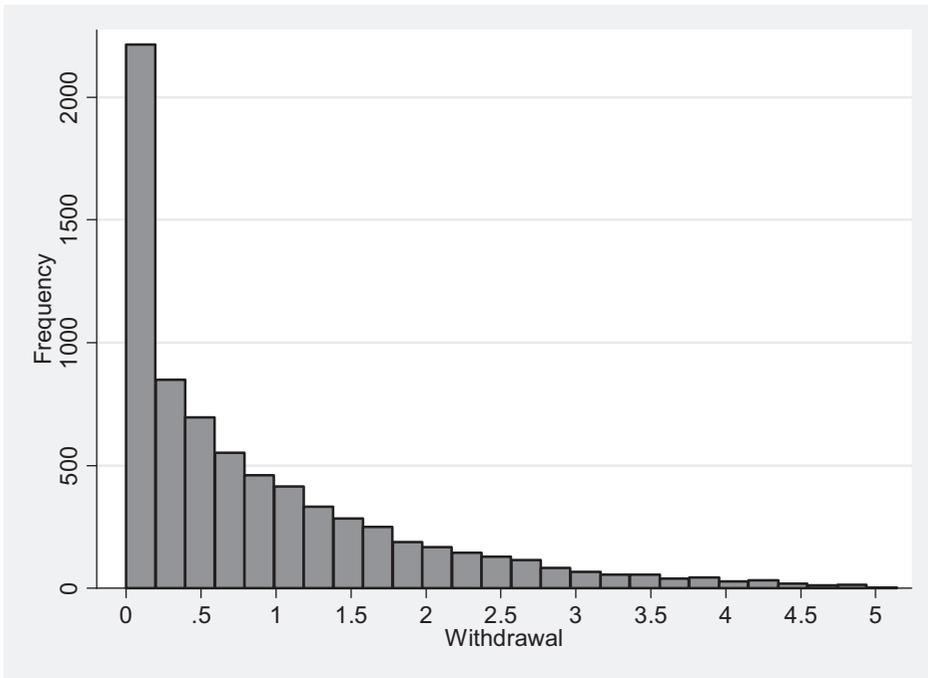
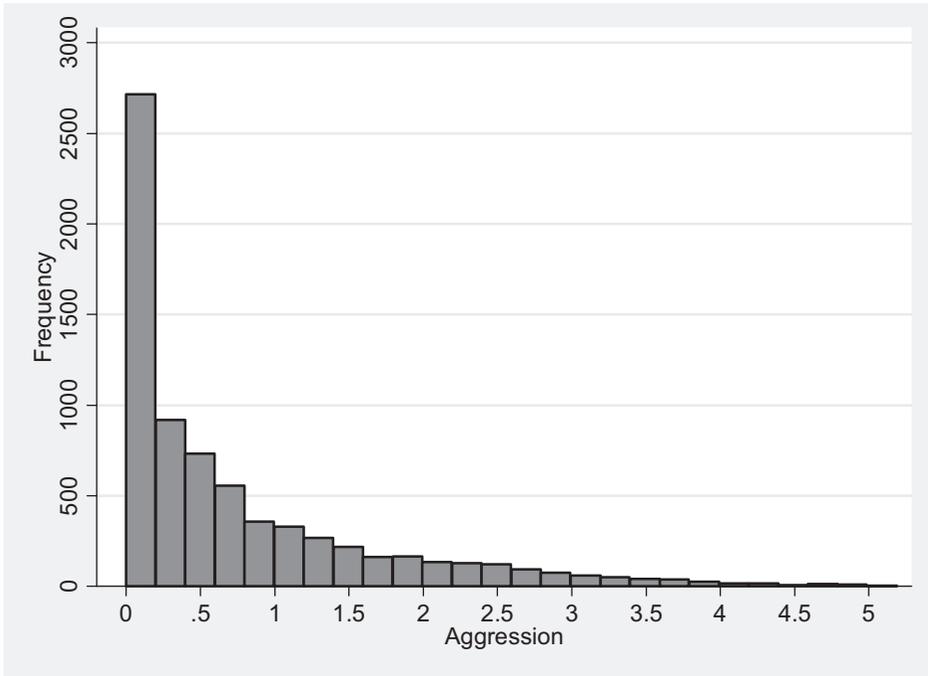


Figure 1 The distribution of scores over the personality variables (whole sample – men only)

include it in the models as a control variable. In previous research, the preferred measure of cognitive ability in NCDS has been the individual's score on a general ability test administered at age 11 (n920). The ability score ranges from a low of 0 to a high of 80.

Class Origin

Information on class origin is provided in the data as father's socioeconomic group (SEG) when the individual was aged 11. The SEGs were recoded into the seven class version of the Goldthorpe schema, using the method proposed by Heath and MacDonald (1987).⁹

Class Destination

Class destination is coded to the SEGs, which were subsequently recoded to the Goldthorpe schema in the way described above. In the following analyses, I compare individuals who entered the salariat (Goldthorpe classes I and II) to those who entered the working class (classes VI and VII). Although we would expect personality traits to also have some impact on entry into the intermediate and petty bourgeoisie classes, I focus here only on entry to the salariat (relative to the working class).

Methodology

In the following analyses I fit binary and multinomial logistic regression models to the data. Only men are included in the analyses. Given that interest is in the effect of personality characteristics on labour market rewards, I felt it necessary that women should be excluded,

as women who are in the labour market are likely to be self-selected on the very variables of interest, that is, their personality traits.¹⁰

Results

I first present some basic descriptive statistics for the explanatory variables in the analyses. Table 2 shows mean values for the sample for the continuous variables aggression, withdrawal, educational attainment and cognitive ability, as well as the distribution of respondents over the class origin categories, for the whole sample and the reduced sample at age 42.

The mean values of the personality variables for the whole sample are 0.8 for aggression and 0.9 for withdrawal. Interestingly, by age 42, the mean values on these variables have fallen slightly, indicating that more aggressive and withdrawn individuals are less likely to continue to take part in panel surveys! In the reduced sample of the 42 year olds, the average levels of educational attainment and cognitive ability are higher than in the whole sample, suggesting again that there may be some differential non-response in the surveys. Finally, at age 42 the proportion of individuals in the sample with a salariat background has increased while the proportion with a working class background has decreased, which suggests again that there is some differential non-response. However, while Table 2 does show that non-response is differentially distributed, on the whole the differences are rather small, and therefore unlikely to have a substantial impact on the findings.

Table 2 Descriptive statistics for variables in the analysis (men only)

	Whole sample*	Age 42
Aggression	0.8 (Max: 5.0)	0.6 (Max: 5.0)
Withdrawal	0.9 (Max: 4.9)	0.8 (Max: 4.9)
Educational attainment	3.9 ($\sigma = 2.2$)	4.4 ($\sigma = 2.1$)
Cognitive ability	41.8 ($\sigma = 16.3$)	46.7 ($\sigma = 15.8$)
Class origin		
1: Higher managerial and professional	10.2	13.7
2: Lower managerial and professional	15.2	17.9
3: Intermediate	9.6	11.0
4: Petty bourgeoisie	5.8	3.8
5: Lower supervisory and technical	6.2	6.6
6: Semi-routine	31.9	28.4
7: Routine	21.1	18.6
n		1933

*The figures given for the whole sample represent the distribution of each variable at the point at which it was measured, when no missing values on other variables in the analyses are taken into account. Thus, the total n will differ depending on the variable under consideration.

Entry to the Salarial

I now move on to examine the effect of the personality variables on an individual's likelihood of being in the salariat. I model the probability of being in the salariat rather than the working class, as a function of the explanatory variables discussed above. The results of the logistic regression are presented in column A of Table 3.

In the logistic regression, it would appear that while withdrawal has a significant negative effect on being in the salariat relative to the working class, the effect of aggression is insignificant. Each additional point on the withdrawal scale (ranging from 0 to 5) decreases the chances of being in the salariat rather than the working class by 15 per cent. Figure 2 shows the effect graphically.¹¹

Figure 2 shows the effect of withdrawal (with all other variables held at their mean values) on being in the salariat. As the level of withdrawal increases, the probability of being in the salariat decreases, from a high of 80 per cent when withdrawal levels are 0, to a low of 63 per cent when withdrawal levels are 5.

The control variables show a familiar pattern. Educational qualifications, cognitive ability and father's class all have strong and significant effects on presence in the salariat rather than the working class. Interactions between the control variables and the personality variables were not significant so the more parsimonious models without interactions were preferred (this model specification is consistent with Jencks, 1979, where

similarly no interactions between the personality variables and controls were found).

Why?

Having shown that the personality variables *do* have an effect on entry to the salariat, I now move on to try to understand why this should be the case. To this end, it is necessary to move from a homogenous conception of 'the salariat' as a focus of analysis to a more detailed response variable. Instead of simply examining the effect of the personality variables on being in the salariat rather than the working class, I will examine the effect of these variables on entry to different subgroups within the salariat, relative to the working class. I now break the salariat down into three occupationally defined subgroups.

The three occupational subgroups were derived simply by reaggregating the SEGs described earlier into occupational groups defined by function within the salariat. The SEGs which were initially coded into the salariat are now included within an occupational subgroup. So, SEG 1.2 (Managers in central and local government, industry, commerce etc. – large establishments) was combined with SEG 2.2 (Managers in central and local government, industry, commerce etc. – small establishments) to form a managerial subgroup. SEGs 3 and 4 (Self-Employed and Employed Professionals) were combined to form a professional subgroup. Finally, SEGs 5.1 and 5.2 (Intermediate Non-Manual Ancillary Workers and Artists,

Table 3 Results of binary logistic regression, predicting entry into salariat v. working class (column A) and results of multinomial logistic regression, predicting entry into salariat subgroups v. working class (column B) (men only)

	Column A		Column B: Age 42					
			Managerial	Professional	Higher technical			
Aggression	0.04	(0.08)	0.13	(0.09)	0.05	(0.14)	-0.24*	(0.13)
Withdrawal	-0.16**	(0.07)	-0.25***	(0.08)	0.02	(0.11)	-0.06	(0.09)
Qualifications	0.44***	(0.04)	0.41***	(0.04)	0.81***	(0.07)	0.38***	(0.05)
Cognitive ability	0.04***	(0.00)	0.04***	(0.01)	0.05***	(0.01)	0.03***	(0.01)
Father's class								
1: Higher managerial and professional	1.39***	(0.29)	1.40***	(0.30)	1.45***	(0.37)	1.26***	(0.35)
2: Lower managerial and professional	0.90***	(0.22)	0.98***	(0.23)	0.82***	(0.33)	0.71**	(0.29)
3: Intermediate	1.06***	(0.25)	1.00***	(0.27)	0.75**	(0.38)	1.27***	(0.31)
4: Petty bourgeoisie	0.04	(0.32)	-0.03	(0.35)	0.20	(0.48)	0.10	(0.44)
5: Lower supervisory and technical	-0.12	(0.26)	-0.28	(0.28)	-0.03	(0.41)	0.14	(0.33)
6: Semi-routine	-0.08	(0.17)	-0.04	(0.18)	-0.40	(0.30)	-0.04	(0.24)
7: Routine	
Constant	-2.91***	(0.26)	-3.29***	(0.28)	-7.24***	(0.52)	-3.75***	(0.35)
Adjusted R ²	0.33		0.37					
Proportion of individuals in each subgroup			0.60		0.18		0.22	

* $P < 0.1$; ** $P < 0.05$; *** $P < 0.01$.

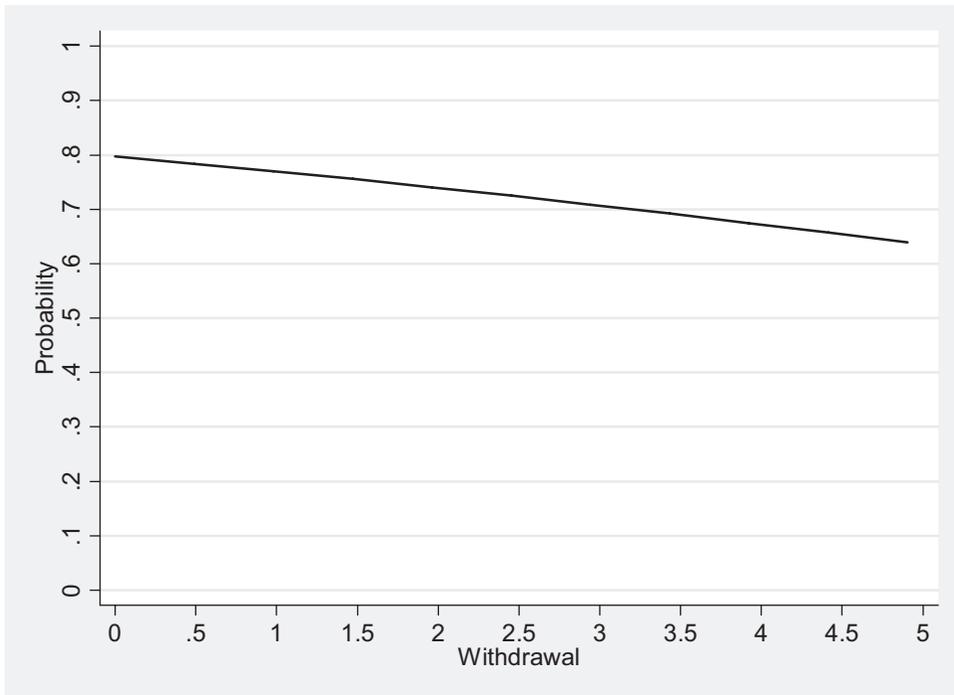


Figure 2 Estimated effect of withdrawal on entry into salariat v. working class

and Foremen and Supervisors Non-Manual) were combined to form a higher technical subgroup (see OPCS, 1970 for details of the SEGs).

I now fit a multinomial logistic regression model to the data. The explanatory variables are exactly the same as in the previous analysis, but the response variable is now the salariat subgroups. I therefore use the explanatory variables to predict entry into each of the salariat subgroups relative to entry into the working class. Again, only men are included in the analysis. The multinomial logistic regression is presented in column B of Table 3.

This analysis shows that a more complicated story lies underneath the analysis on the basis of class. While the class analysis showed that of the personality characteristics only withdrawal had a significant impact on being in the salariat (relative to the working class) at age 42, the occupational subgroup analysis demonstrates that both aggression *and* withdrawal are important for entry into different occupational subgroups within the salariat. Withdrawal has a significant negative effect on being in the managerial subgroup: the chances of entering this subgroup relative to entering the working class are reduced by 22 per cent for each additional point on the withdrawal scale. It seems that the more outgoing an individual is, the more likely it is that they will be in the

managerial salariat subgroup rather than the working class, all else equal. However, aggression has no significant effect on entry to this subgroup. Conversely, aggression has a strong and significant negative impact on entry to the higher technical salariat subgroup, while withdrawal has no significant effect. For each additional point on the aggression scale, the chances of being in the higher technical subgroup relative to being in the working class are reduced by 21 per cent (note that the p-value for this coefficient is 0.057). But while aggression and withdrawal affect the chances of being in the higher technical and managerial subgroups respectively, neither has any significant effect on the chances of being in the professional subgroup. Personality traits, it seems, have no impact on an individual's likelihood of entering a professional occupation rather than a working class one.

Given that both aggression and withdrawal have significant effects on the probability of being found in the salariat subgroups, why then did the analysis on the basis of class show that only withdrawal had a significant negative effect on entry to the salariat? A possible explanation lies in the bottom row of Table 3, which shows the proportion of individuals falling into each of the subgroups. At the age of 42, 60 per cent of men with a salariat class position are to be found in managerial

occupations, with around 20 per cent in each of the professional and higher technical subgroups. So withdrawal has a significant negative effect on entry to the salariat because it has a significant negative effect on entry to managerial occupations, which make up a large part of the salariat at this time. Although aggression has a significant negative effect on entry to higher technical occupations, this effect is hidden because of the relatively small proportion of salariat individuals in higher technical positions.

Turning to examine the control variables in the analysis, educational qualifications appear to have differing effects depending on which salariat subgroup is considered. Education has the largest effect on being found in professional occupations, and the smallest effect on being found in managerial occupations within the salariat. Cognitive ability seems to have a similar relationship, having its largest effect on entry to professional occupations. Father's class remains a significant and important predictor of entry into the salariat subgroups.

To summarise, in the logistic regression, I showed that of the two personality traits, withdrawal had an impact on being found in the salariat rather than the working class. Breaking the salariat down into three subgroups showed that aggression has a significant negative effect on entry to higher technical occupations, while withdrawal has a significant negative effect on entry to managerial occupations. Neither personality trait has any effect on entry to professional occupations. I then argued that the findings of the original logistic regression analysis could be understood as resulting from a compositional effect.

Discussion

Why, then, should aggression and withdrawal have negative effects on entry to higher technical and managerial occupations respectively? Or perhaps more intuitively, why should being passive and outgoing be *beneficial* for these different types of occupations? I move now towards a micro-level explanation of the type outlined in the introduction, that is, that personality traits are rewarded in these occupations because they are relevant to the type of work being carried out in them.

Withdrawal was found to have a negative effect on entry to the managerial salariat subgroup (rather than the working class). Intuitively, it is clear why being outgoing rather than withdrawn is advantageous for managerial jobs. Managers have to deal with people on an everyday basis, both with clients and other employees. They are responsible for projecting the firm's image to

clients, but also need to be able to work with their fellow employees, to lead, motivate and organise staff below them. Employers for occupations within this subgroup will be aware that their managers will need to look good and sound right to perform their jobs effectively (c.f. Warhust and Nickson, 2001). They therefore look for outgoing individuals. Educational qualifications had the smallest impact on entry to this subgroup, again suggesting that other types of abilities are more relevant to job performance.

Passivity was found to be an advantageous personality trait for entry into the higher technical subgroup. The functional requirements of the occupations falling within the higher technical subgroup can be described as occupations whose '... main tasks require experience and knowledge of principles and practices necessary to assume operational responsibility and to give technical support ...' (description of Major Group 3 from SOC90, whose occupations almost entirely comprise the higher technical subgroup; OPCS, 1990). Thus, individuals in these occupations spend most of their time working with 'things' rather than people, except in an advisory capacity. Given this advisory capacity, it is important that higher technical workers are passive rather than aggressive. However, as individuals in this subgroup will not normally be required to interact with clients or other employees, they will not be required to be outgoing.

The only salariat subgroup for which the personality variables had no effect on entry was the professional subgroup. While employers for occupations falling within the managerial and technical subgroups might have strong reasons to look at personality characteristics when recruiting, arguably employers for occupations falling within the professional subgroup do not. For these occupations, the primary selection criteria is educational qualifications, as evidenced by the fact that qualifications had a large effect on entry to this subgroup (far larger than the effects on entry to the other two subgroups). Educational qualifications certify that the individual will be able to carry out the job. While employers might desire their professional employees to be passive and outgoing, these traits are not so relevant to the job at hand.

Conclusion

I have presented evidence to show that two types of personality traits, aggression and withdrawal, have different effects on entry to different occupations within the salariat. I have argued that a micro-level explanation of this

empirical finding, where employers are seen to reward personality traits which are valuable in the job, is supported. Being outgoing (non-withdrawn) is important for managerial occupations in the salariat, while being passive (non-aggressive) is important for higher technical occupations. Personality traits do not appear to have any impact on entry to professional occupations.

While the results I have presented are consistent with a micro-level explanation in which employers are seen to have the decision about which traits to reward on the labour market, one issue which might be raised is whether individuals select *themselves* into different types of occupations on the basis of their personality characteristics. It may be that more outgoing individuals are more likely to choose managerial occupations because they feel that they are better suited to those than, say, professional occupations. However, even if individuals did select themselves into different types of occupations, employers would still get the ultimate say about whether to employ those individuals. Ultimately, without more data it is impossible to know whether self-selection plays a role or not.

Although some data are available to examine the impact of personality characteristics on labour market outcomes, many datasets do not contain the type of information that is needed. Even the extremely rich dataset analysed here does not provide as much information on personality characteristics as would be desired (e.g. the inclusion of the 'Big Five' personality measures alongside other social stratification measures would be useful for further research). The fact that personality traits have an impact on occupational attainment, even when controlling for the usual cognitive and social background variables suggests that this is a promising area for future research, for which more and better data are required.

Notes

1. While most research examining the determinants of occupational and income attainment has focussed on the role of educational qualifications, there has been recent interest in the role of cognitive abilities (particularly IQ) taken apart from qualifications. *The Bell Curve* was a well-publicised example, although this has been widely criticised (see Fraser, 1995; Fischer *et al.*, 1996; Devlin *et al.*, 1997; Arrow *et al.*, 2000; Korenman and Winship, 2000). In particular, assumptions concerning the validity of IQ tests, simplistic and dubious conceptions of the heritability of IQ and problems with data and

methodology make findings less than convincing. The general consensus is that IQ affects occupational and income attainment primarily through its effect on the acquisition of educational qualifications.

2. Why schooling should affect wages is the subject of some debate (see Ashenfelter and Rouse, 2000; Bowles and Gintis, 2000).
3. Personal characteristics including beauty, height, weight and self-presentation have all been found to affect occupational success. Studies have found that attractive people earn more than average-looking people, who earn more than unattractive people. The premium for attractiveness has been estimated as a 4–5 per cent increase in earnings (Hamermesh and Biddle, 1994; see also Hatfield and Sprecher, 1986).
4. One of the most widely-used measures is the 'Big Five' categorisation of personality traits. Another popular measure is the Rotter scale, which measures whether individuals are 'internal' or 'external' (fatalistic), i.e. whether they treat outcomes as arising from their own hard work or whether they treat outcomes as the result of luck.
5. The NCDS data are available from the UK Data Archive, University of Essex (<http://www.data-archive.ac.uk>). For further information about the NCDS, or Britain's other cohort studies, a good place to start is the website of the Centre for Longitudinal Studies (<http://www.cls.ioe.ac.uk>).
6. A problem with using the teachers' evaluations is that their ratings might be affected by extraneous characteristics of the child. The child's race, sex or IQ, for example, could influence a teacher's perception of their personality traits (Ghodsian, 1977: 27). Ghodsian suggests that we should treat the BSAG as if we are, partly, 'looking at the child's behaviour through the eyes of the teacher' (1977: 27).
7. And of course, the non-normal distribution of independent variables does not violate the assumptions of logistic regression analysis.
8. For simplicity, and because education is not the focus of the analysis, this variable is included in the models as an interval-level variable. Although the CASMIN scale is not a true interval-level variable, the seven levels are ordered. I have fitted alternative models including education as a categorical variable, but the substantive findings do not change. In particular, the effects of the personality variables are unaltered.
9. One problem with recoding the father's SEGs is that it is not possible to distinguish between employers and managers in SEGs 1 and 2. Therefore, both large

employers (1.1) and large managers (SEG 1.2) are assigned to SEG 1 (and therefore Class 1), while small employers (2.1) and small managers (2.2) are assigned to SEG 2 (Class 2). These groups are identified in the class destination SEGs, so that large and small employers can be, and are, both coded to the petty bourgeoisie.

10. The effect of personality traits on women's labour market rewards is to be studied at a later date.
11. Figure 2 shows the effect of increasing levels of withdrawal on entry to the salariat while holding all other factors constant at their mean value. For a full explanation of how to calculate the probabilities, see Fox (1987).

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