ACHIEVEMENT MOTIVATION, EDUCATIONAL ATTAINMENT, CYCLES OF DISADVANTAGE AND SOCIAL COMPETENCE: SOME LONGITUDINAL DATA

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SUMMARY. The social and familial background, intelligence and personality of children and adolescents have been shown to contribute to their status in society, their educational attainment and to social competence in general as adults (Rutter and Madge, 1976; Garmezy, 1987). This study considers how these factors are translated into behaviour through the mediation of achievement motivation. Using a multidimensional approach to achievement motivation (Cassidy and Lynn, 1989), the achievement factors that predicted educational attainment and socio-economic status in a sample of 451 young adults were identified. Data for the sample of 199 males and 252 females were collected at two points over a seven-year period. Initial assessment occurred at age 16 and final assessment at age 23 approximately. It is suggested that a focus on the development of cognitive-behavioural styles of achievement motivation, problem-solving and attribution may provide a useful future direction for research on social competence. The implications of such a focus are discussed.

INTRODUCTION

DESPITE education and welfare programmes, the socio-economic status of young adults tends to strongly reflect that of their parents (Jencks, 1972). It is an issue that attracted much interest in the wake of the "cycle of transmitted disadvantage" speech by Sir Keith Joseph (1972). Rutter and Madge (1976) review the area and conclude that intergenerational cycles of disadvantage do exist, but that the exceptions are many. The processes involved in breaking free from the cycles of disadvantage have received less research attention.

A number of theories have been proffered to explain the intergenerational transmission of disadvantage. Lewis's (1968) notion that the poor have a qualitatively different culture from the rich in regard to child-rearing practices, and socialisation processes is one such theory.

One presumed vehicle for social mobility is education. In turn, access to education is determined for many by economic status. Hence one might suspect that both social advantage/disadvantage and educational status share some common determinants. Duncan (1968) devised a model based on path analysis which demonstrates an interaction between socio-economic background and educational achievement, mediated by intelligence and school-type. Research by Duncan *et al.* (1972) and Jencks (1972) in the USA, and by Tyler (1977) and Halsey *et al.* (1980) in Britain, has supported the model. Lynn *et al.* (1983) extended the model to include the Eysenckian personality variables, neuroticism, extraversion and psychoticism, and a measure of two dimensions of achievement motivation (i.e., work ethic and status aspiration). The addition of these variables increased the explanatory power of the model to 64 per cent of the variance in predicting educational attainment at 16 years, an increase of between 8-12 per cent over previous studies (Lynn *et al.*, 1983).

Analysis of the process would suggest that the "reaction range" of intelligence and temperament which the individual inherits will be moulded by the environmental contingencies that prevail in the social and physical environment experienced (Pervin, 1984). Different socio-economic backgrounds will provide different environmental contingencies. The result will be the production of cognitive-behavioural styles distinctive to the individual, and which will form the basis of his/her interaction with the social and physical environment.

Central to the issue will be the concept of "achievement strivings" which encompass both the types of goals individuals aspire to, and the cognitive strategies used in order to attain these goals (Showers and Cantor, 1985). The goal setting and striving of the individual is likely to be a function of his/her social and family background. In fact, it is at this level of goal setting and striving to achieve that the individual interacts with the environment. The evidence from those who escape this "socio-economic trap", i.e., the entrepreneurs, is that they differ from the general population on achievement motivation (McClelland, 1961; Lynn, 1969; Hundal, 1970).

The hypothesis is that achievement motivation will be an important mediating variable in the intergenerational reproduction of economic inequality. A problem with achievement motivation is that, despite the implicit assumption that it is not a unitary construct, it has quite often been treated by researchers as if it were. The evidence is that it is multidimensional in nature (Jackson *et al.*, 1976; Cassidy and Lynn, 1989). The recent development of a multi-factorial scale (Cassidy and Lynn, 1989) enables this study to incorporate a more comprehensive analysis of achievement motivation than was previously possible. Lynn *et al.* (1983) applied the Duncan (1968) path analysis model to a group of 16-year-olds (N=701). This involved assessing the children at the beginning of their fifth year on measures of IQ, personality, achievement motivation, home background and school type, in order to test the power of these variables to predict educational attainment in the end of year examinations.

The present study extends the Lynn *et al.* (1983) model by following the sample over a seven-year period in order to assess the power of the model to predict both educational attainment and socio-economic status at age 23, when it is assumed that the majority of individuals will have completed their education and chosen a role in life. In addition, the aim of the study was to focus on the role of achievement motivation in the model.

METHOD

Sample

Participants were 199 males and 252 females (total = 451) who were initially assessed at age 16 while at school and again seven years later when their average age was 23 years.

Measures

The variables measured and the instruments used at each stage of assessment are listed below.

Stage 1 (initial assessment at age 16 years)

(1) *Intelligence*: the Abstract Reasoning Scale from the Differential Aptitude Test, a non-verbal abstract reasoning test lasting 25 minutes approximately (Bennett *et al.*, 1973).

(2) *Personality*: the Junior Eysenck Personality Questionnaire (Eysenck and Eysenck, 1975).

(3) *Achievement motivation*: a 20-item measure of achievement motivation constructed by Lynn *et al.* (1983), to measure the two dimensions of Work Ethic and Status Aspiration.

(4) A *personal data form* to assess parental socio-economic status, father's and mother's education level, and employment status, family size, and type of school attended. Socio-economic status was rated on a scale of 1-6 according to the Hall-Jones index. Parental

education was scored as school leaving age, and family size as the number of children in the family. School type was a dichotomous classification of either grammar or secondary/intermediate.

(5) A measure of *parental encouragement* to study. This was a 13-item forced-choice scale constructed for the study. Items were designed to assess the amount of interest shown by parents in their children's study behaviour. For example, "Do your parents usually check that you have done your homework?"

(6) A *possession index* consisting of a range of items. The number of items possessed was used as a proxy measure of economic advantage/disadvantage. Items listed were considered to be in the luxury range of goods.

(7) A *crowding index* was produced by dividing the number of family members by the number of available bedrooms. A more crowded home environment might be considered a disadvantage. These measures are detailed in the Lynn *et al.* (1983) paper.

Stage 2 (follow-up at age 23 years)
(1) A *personal data* form requesting details of educational achievement and socio-economic status. Educational status was scored on a scale of from 0-4 from no formal qualification to degree level. Socio-economic status was coded from 1-6 according to the Registrar General's index of occupations.

(2) *Achievement motivation*: the Cassidy-Lynn Achievement Motivation Questionnaire (Cassidy and Lynn, 1989). This is a multi-factorial measure which taps the seven factors of Work Ethic, Acquisitiveness, Dominance, Excellence (the pursuit of), Competitiveness, Status Aspiration and Mastery.

(3) The Eysenck Personality Questionnaire — revised (Eysenck *et al.*, 1985).

Procedure
The sample was initially assessed by Lynn *et al* in 1979, and reported in their 1983 paper. The target sample consisted of all the adolescents in their fifth year of secondary education in a county town and its surrounding catchment area, comprising approximately 43,000 inhabitants. A target sample of 833 was identified, but owing to the refusal of one school to participate, a final sample of 701 children, 347 boys and 354 girls, were tested on the variables listed above under stage 1.

These 701 were contacted seven years later, in 1986, by the present authors. Data on the variables outlined above under stage 2 were obtained for 451 respondents, i.e., 64.3 per cent of the original sample.

RESULTS
The present report concerns itself with extending the Lynn *et al.* (1983) model of the relationship between home background, IQ, personality, school-type, and educational attainment at 16 years (Figure 1), to educational attainment and socio-economic status at the seven years follow-up stage, average age 23 years. In addition the study considers the mediating effects of achievement motivation and personality as measured at age 23. Pearson correlation co-efficients were calculated between the variables and are shown in Table 1.

The next stage was to enter all the variables in a multiple regression analysis with occupational status at age 23 as the first dependent variable. Pairwise deletion of missing cases was the option used in all regression analysis. Variables were entered in the equation in temporal and causal sequence. At the next step educational attainment at age 23 was the dependent variable. At step 3 the achievement motivation factors were entered as dependent variables. In this way all variables were entered in turn as dependent variables and the beta values shown in Table 2 were elicited.

FIGURE 1

PATH MODEL OF THE PROPOSED DETERMINANTS OF EDUCATIONAL ATTAINMENT AT 16+ (FOR BOYS)*
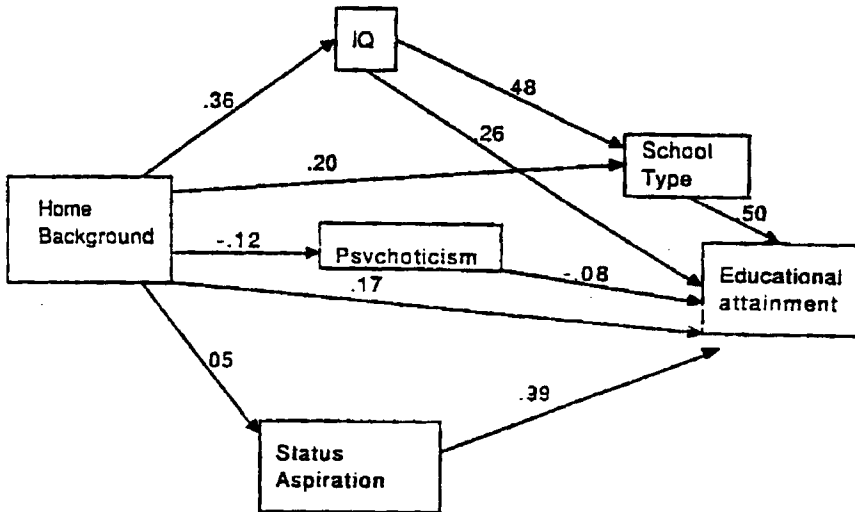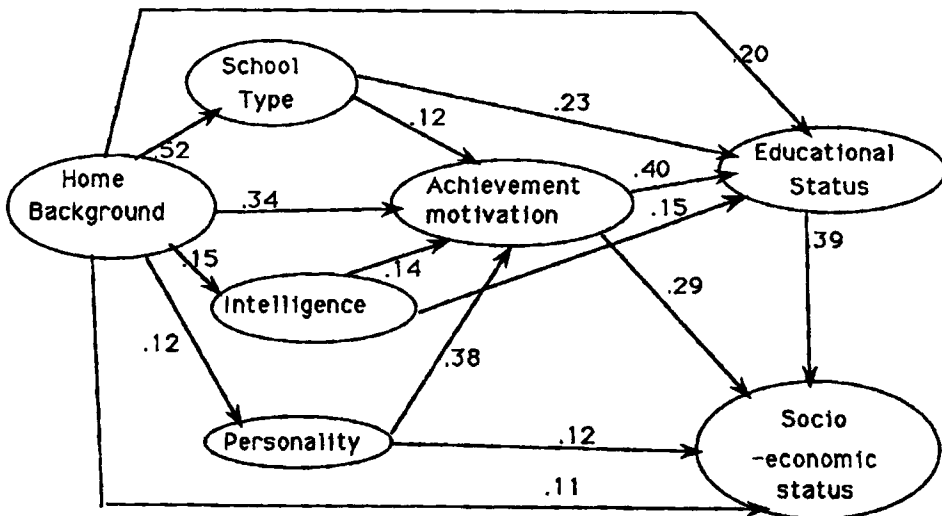

FIGURE 2

PATH DIAGRAM FOR ALL PARTICIPANTS (N=451)

* (From Lynn *et al*, 1983, page 479).

TABLE 1

PEARSON CORRELATION COEFFICIENTS FOR ALL VARIABLES

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1. Parental SES	1.00	0.04	0.04	-0.26	0.00	-0.06	0.22	-0.02	-0.03	-0.00	0.05	-0.07	0.04	-0.04	-0.05	-0.06	0.04	0.07	0.04	-0.02	-0.04	0.04	0.04	-0.06	-0.00	-0.07	-0.03	-0.05
2. Father's education		1.00	0.78	-0.10	0.02	0.12	0.03	0.20	0.10	0.14	0.13	-0.13	-0.00	-0.00	-0.05	-0.06	-0.06	0.02	0.03	0.10	0.15	-0.07	-0.03	0.09	-0.05	0.00	0.05	-0.04
3. Mother's education			1.00	-0.03	0.01	0.17	-0.00	0.17	0.14	0.16	0.13	-0.15	-0.01	-0.00	-0.05	-0.08	-0.08	-0.03	0.02	0.10	0.17	-0.03	0.00	0.13	-0.02	0.02	0.10	-0.03
4. Father's employment				1.00	0.02	-0.07	-0.07	-0.08	-0.02	-0.03	0.02	-0.08	0.01	0.07	-0.03	0.00	0.04	0.01	0.04	-0.06	0.02	-0.03	-0.01	-0.04	-0.03	-0.09	0.03	-0.05
5. Mother's employment					1.00	0.07	0.25	-0.09	-0.09	-0.08	0.02	-0.05	-0.05	-0.01	0.01	0.01	0.02	-0.09	0.06	0.00	-0.10	-0.02	-0.03	-0.10	-0.05	-0.04	0.03	-0.07
6. Home ownership						1.00	-0.02	0.20	0.05	0.13	0.21	-0.14	-0.07	-0.06	-0.08	-0.12	-0.06	-0.07	-0.07	0.04	0.10	-0.03	-0.10	-0.06	-0.06	0.00	0.01	-0.01
7. Crowding							1.00	-0.09	-0.07	-0.17	-0.13	-0.12	-0.07	-0.09	-0.06	-0.05	0.06	-0.05	-0.00	-0.02	-0.21	0.06	0.03	-0.07	-0.02	-0.08	-0.06	-0.04
8. Possessions								1.00	0.14	0.24	0.20	-0.09	0.05	0.04	-0.08	-0.11	-0.04	0.11	-0.08	0.12	0.12	-0.05	0.05	0.08	0.02	0.01	0.04	-0.03
9. Parental encouragement									1.00	0.13	0.11	0.02	0.08	0.04	-0.12	-0.09	-0.03	0.14	-0.02	0.09	0.19	-0.06	0.05	0.14	-0.02	0.08	0.20	0.09
10. School type										1.00	0.43	-0.08	0.01	0.09	-0.11	-0.11	-0.01	0.03	-0.12	0.24	0.46	-0.12	-0.15	0.18	-0.01	0.01	0.11	0.04
11. Intelligence											1.00	-0.00	0.14	0.03	-0.37	-0.39	-0.08	0.10	-0.16	0.24	0.40	0.01	-0.10	0.21	0.03	-0.06	0.12	0.08
12. Psychoticism (1)												1.00	0.48	0.46	-0.06	-0.01	0.14	0.06	0.02	-0.04	0.04	0.14	0.11	0.07	0.03	-0.06	0.09	0.08
13. Extraversion (1)													1.00	0.27	-0.06	-0.04	0.03	0.27	-0.07	0.04	0.05	0.09	0.15	0.15	0.04	0.12	0.15	0.16
14. Neuroticism (1)														1.00	-0.03	0.07	-0.06	0.01	0.25	0.06	0.08	0.02	0.04	0.04	0.15	-0.00	0.05	-0.03
15. Work ethic (1)*															1.00	0.22	-0.06	-0.05	0.04	-0.12	-0.14	0.10	0.04	-0.13	0.04	0.03	-0.05	0.12
16. Status aspiration (1)*																1.00	-0.02	-0.03	0.04	-0.15	-0.19	0.05	0.10	-0.14	0.06	0.03	-0.03	0.11
17. Psychoticism																	1.00	0.09	-0.01	-0.17	-0.11	-0.25	0.10	0.01	-0.25	0.07	-0.00	-0.10
18. Extraversion																		1.00	-0.19	0.11	0.08	0.07	0.07	0.39	0.02	0.10	0.36	0.20
19. Neuroticism																			1.00	-0.11	-0.08	-0.11	0.07	-0.04	-0.01	0.13	0.04	-0.23
20. Socio-economic status																				1.00	0.44	-0.10	-0.15	0.12	0.02	-0.02	0.24	0.02
21. Educational attainment																					1.00	-0.13	-0.23	0.25	-0.01	0.03	0.22	0.06
22. Work ethic																						1.00	-0.01	0.07	0.31	-0.01	-0.04	0.37
23. Acquisitiveness																							1.00	0.25	0.02	0.36	0.22	0.08
24. Dominance																								1.00	0.09	0.35	0.62	0.30
25. Excellence																									1.00	-0.00	0.05	0.23
26. Competitiveness																										1.00	0.40	0.21
27. Status aspiration																											1.00	0.18
28. Mastery																												1.00

Correlations underlined are significant at the 0.05 level or less

TABLE 2

BETA VALUES FROM MULTIPLE REGRESSION ANALYSIS FOR ALL PARTICIPANTS AND BY SEX

Variable	Beta Values			Dependent Variable
	All	Males	Females	
Step 1				
Educational status	0.39	0.49	0.28	Socio-economic Status
Status aspiration	0.19	0.15	0.16	
Psychoticism	−0.12		−0.20	
Possession index	0.11	0.14		
Competitiveness	−0.10			
Family size			0.17	
Step 2				
School type	0.23	0.36	0.31	Educational attainment
IQ	0.15		0.26	
Crowding	−0.10	−0.15		
Acquisitiveness	−0.17	−0.19	−0.15	
Dominance	0.15	0.14	0.20	
Parental encouragement	0.10	0.18		
Work ethic	−0.08			
Step 3				
Psychoticism	−0.26	−0.18	−0.32	Work ethic
School type	−0.14		−0.17	
Neuroticism	−0.13	−0.16		
Father's education		−0.15		
School type	−0.13		−0.18	Acquisitiveness
Psychoticism (1)*	0.18			
Neuroticism (1)	−0.12			
Mother's education		0.15		
Extraversion	0.37	0.33	0.42	Dominance
IQ	0.14		0.16	
Mother's education	0.14	0.25		
Psychoticism (1)	0.10			
Parental SES	−0.10		−0.15	
School type	0.10		0.15	
Home ownership	−0.10			
Psychoticism	−0.24	−0.17	−0.35	Excellence
Neuroticism (1)	0.14	0.24		
Family size		0.15		
Neuroticism	0.19	0.14	0.17	Competitiveness
Extraversion	0.13		0.19	
Psychoticism (1)	0.16			
Neuroticism (1)	−0.13			
Mother's employment		−0.16		
Extraversion	0.35	0.40	0.28	Status aspiration
Parental encouragement	0.15	0.19		
Neuroticism	0.13	0.16		
IQ	0.10		0.18	
Mother's employment			0.12	
Neuroticism	−0.20	−0.28	−0.15	Mastery
Extraversion	0.14		0.24	
Work ethic (1)	0.13		0.15	
Psychoticism	−0.11		−0.16	
Extraversion (1)	0.12			
Step 4				
Psychoticism (1)	0.21			Psychoticism
Neuroticism (1)	−0.15			
Crowding		0.16		
Father's employment			0.14	

*   (1) indicates the score of this variable at stage 1 (ie age 16)

TABLE 2 CONTINUED

BETA VALUES FROM MULTIPLE REGRESSION ANALYSIS FOR ALL PARTICIPANTS AND BY SEX

Variable	Beta Values			Dependent Variable
	All	Males	Females	
Extraversion (1)	0.26	0.21	0.32	Extraversion
Parental encouragement	0.12	0.19		
Possession index			0.14	
Neuroticism (1)	0.29	0.28	0.27	Neuroticism
IQ	–0.15	–0.15		
Extraversion (1)	–0.13		–0.19	
School type			–0.15	
Step 5				
IQ	–0.38	–0.34	–0.39	Work ethic (1)
Crowding	–0.10	–0.14		
Parental encouragement	–0.09	–0.17		
IQ	–0.40	–0.35	–0.43	Status aspiration (1)
Crowding	–0.14			
Family size	0.13			
Extraversion				
Step 6				
Mother's education	–0.14			Psychoticism (1)
Crowding	–0.13			
Home ownership	–0.12		–0.25	
Father's employment	–0.10	–0.16		
Parental SES			–0.25	
Possession index			–0.24	
Mother's employment			–0.17	
IQ	0.16		0.24	Extraversion (1)
Home ownership	–0.11		–0.23	
Possession index		0.15		Neuroticism (1)
Step 7				
School type	0.39	0.46	0.34	IQ
Home ownership	0.15	0.19		
Parental encouragement			0.12	
Step 8				
Possession index	0.22		0.27	School type
Family size	–0.19	–0.32		
Mother's education	0.11		–0.14	
Home ownership		0.15		
Crowding index			–0.14	
Step 9				
Family size	–0.14	–0.18		Parental encouragement
Possession index	0.11			
Mother's education	0.11	0.17		
Step 10				
Mother's education	0.17	0.19	0.15	Home ownership
Parental SES			–0.21	
Father's employment			–0.15	
Step 11				
Family size	0.43	0.46	0.44	Crowding
Parental SES	0.23	0.23	0.25	
Mother's employment	0.15		0.22	
Step 12				
Father's education	0.21	0.24	0.15	Possession index
Parental SES	–0.10			
Mother's employment			–0.13	

*　(1) indicates the score of this variable at stage 1 (ie age 16)

Using the beta values in Table 2 it is possible to produce path diagrams of the main relationships. These diagrams are presented in Figure 2 for all participants, and in Figures 3 and 4 for male and female participants respectively.

DISCUSSION

This study replicates the findings by Lynn *et al.* in that school-type, IQ, and home background are important predictors of educational attainment. School-type is the single most important predictor, accounting for 19.6 per cent of the variance. IQ accounts for 13.1 per cent and the combined home background variables of crowding and parental encouragement account for 18.1 per cent of the variance. The other important direct predictors of educational attainment are the achievement motivation dimensions of acquisitiveness, dominance and work ethic. Among them these variables account for 36.2 per cent of the variance. The total variance accounted for by the variables in this study is 87 per cent.

The data suggest that a child who is more intelligent, attends a grammar school as opposed to a secondary modern school, is brought up in a less physically crowded environment where parents provide encouragement to study, and who is less acquisitive for material reward, has a less strong work ethic and aspires to lead, will attain a higher educational level. Much of this accords with intuition, except the correlation between lower work ethic and higher educational attainment. Perhaps the explanation lies in the interpretation of work ethic as the belief that hard work is good for the soul and in turn the assumption that hard work means physical work. This is discussed further below.

The suggestion is, though, that factors such as intelligence, while playing an important role, do not provide the sole necessary precondition for educational attainment. It is the combination of intelligence, favourable home background, type of school attended, and achievement motivation which is important. From this study it would appear that achievement motivation is a better predictor of educational attainment than IQ, accounting for almost three times as much of the variance.

From Table 2 we can see the predictors of achievement motivation. A high work ethic score is best predicted by low psychoticism and neuroticism scores, and by school type. In fact, the data suggest that attendance at a secondary modern school is more likely to predict high work ethic than attending a grammar school. As already mentioned, it is lower work ethic that predicts higher educational attainment. The fact that grammar school attendance is associated with lower work ethic, and that grammar school students attain higher educational qualifications, shows that this finding is not an artefact.

Again, for acquisitiveness the same variables apply except that in this case higher psychoticism scores go with higher acquisitiveness. The third dimension of achievement motivation which is a direct predictor of educational attainment is dominance. This is a factor which includes the aspiration to lead (Cassidy and Lynn, 1989). Here again personality factors play a predictive role, with higher extraversion and psychoticism scores going with higher dominance scores. It is appropriate to mention here that psychoticism as a personality dimension is problematic in interpretation. Among other things, high scores may indicate a tendency to take risks, to be less conforming and more anti-social. It is likely that it is these elements of the factor that are important in the present context.

School-type is also predictive of dominance, but this time it is the grammar school alumni who are more likely to display higher dominance scores. IQ is also predictive of dominance in that the correlation is positive.

Home background variables are also important, namely mother's education, parental socio-economic status, and home ownership. The child whose mother is better educated, and who comes from a more economically stable background, is more likely to aspire to leadership.
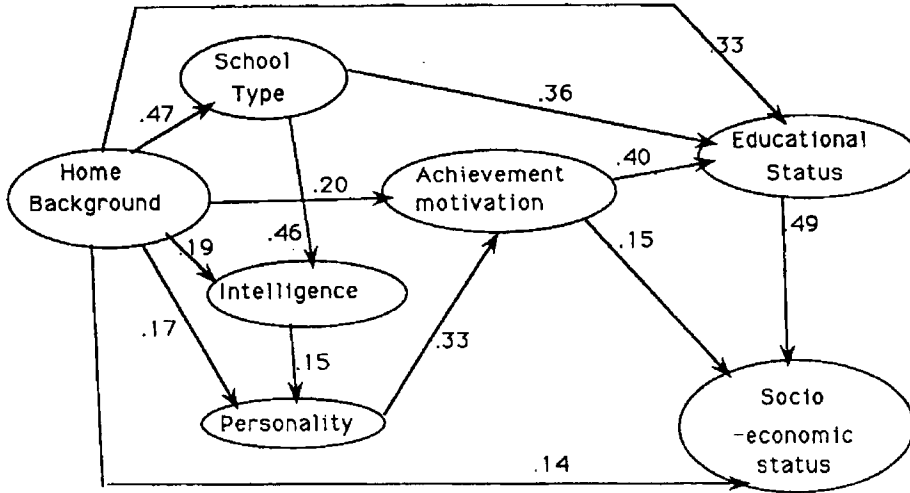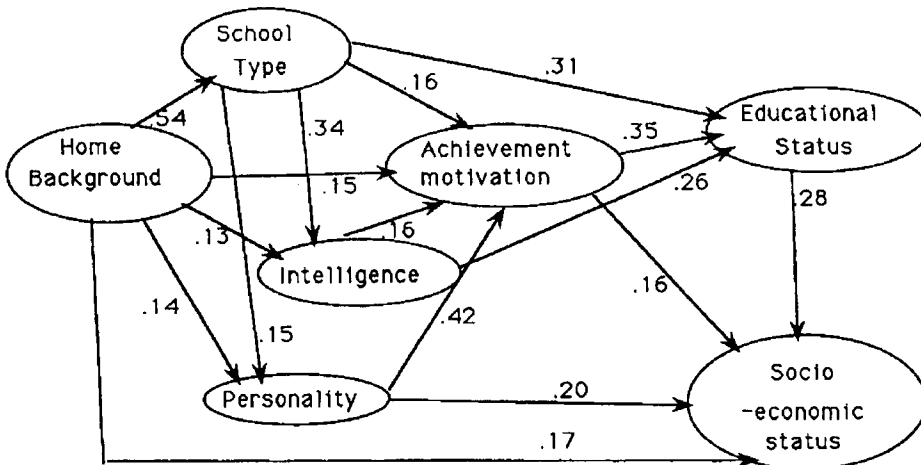
FIGURE 3

PATH DIAGRAM FOR MALES (N=199).

FIGURE 4

PATH DIAGRAM FOR FEMALES (N=252).

The model which emerges from the data is one which places achievement motivation in a central mediating role between home background, intelligence, personality, school-type and educational attainment.

To anticipate any criticism of the treatment of achievement motivation and personality separately here, it is best to clarify the distinction. Achievement motivation is treated here as a multifactorial construct with at least seven distinct dimensions (Cassidy and Lynn, 1989). These dimensions represent aspirations to different social and work values which are clearly learned through the socialisation experience. There is evidence to suggest that though in later adult life factors such as work ethic may form stable behavioural and cognitive styles for the individual, and thus form part of the personality, they are slow to develop and are flexible over adolescence and early adulthood at least. Hence for this sample (maximum age = 25), achievement motivation may reasonably be considered to be just beginning to stabilise. On the other hand, there is evidence that the well-known Eysenckian factors of extraversion, neuroticism, and psychoticism exhibit stable patterns in childhood.

From the present data we can see that the two dimensions of achievement motivation (work ethic and status aspiration), measured by Lynn *et al.* (1983), do not appear to have remained stable over time. The correlations between these measures at stage 1 (age 16 years) and the same measures at stage 2 (age 23 years) are very low and not statistically significant (Table 1). On the other hand, the correlations for the Eysenck personality factors across the two stages are statistically significant, suggesting stability (Table 1).

Also, from Table 2, we can see that scores on the personality factors (extraversion, neuroticism and psychoticism) at age 16 are significant predictors of scores on the same factors at age 23.

Figure 2 provides a path model summarising the data. It is a summary of the multiple regression analysis for the total sample (N=451). For simplicity, achievement motivation, home background, and personality are considered as single variables, summating the effects of their component factors as represented by the beta values in Table 2. The mediating role of achievement motivation is clearly established in the model.

The evidence is that the influence of socialisation (formal and informal), through family background and school, combines with the more stable and early developed characteristics of personality and intelligence, to produce a particular achievement motivational style which in turn predicts educational attainment.

The importance of recognising the role of achievement motivation lies in its implications for educators and for parents. It is an aspect of the individual that would appear to take longer to develop and is more malleable, as discussed above. It presents an area of focus which suggests ways in which we might improve the probability of higher educational attainment.

It is important to recognise here that the use of a multidimensional analysis of achievement motivation has brought out the importance of the individual factors, whereas an unidimensional approach, i.e., taking an overall achievement motivation score, would have hidden its effects. This is because the direction of effect of the various factors is not the same, and summation would involve a cancelling out effect. We would argue for the use of profile analysis. By this is meant simply that individuals' scores on a variety of different dimensions should be looked at, rather than a single score of achievement motivation.

Furthermore, achievement motivation is closely linked with other variables. Attributional style in particular, regarding success and failure, has been linked in the research literature to achievement motivation (Weiner, 1986). Attributions regarding success and failure will apply an important role in determining achievement motivation.

Another variable that has attracted attention recently in a perhaps not so different area, i.e., the area of vulnerability to stress, is problem-solving style (Nezu, 1987). Problem-solving style has been shown to be related to attributional style and social competence (Nezu

et al., 1989), and achievement motivation (Gilbert, 1984). The relationship between these variables is an area requiring research. The importance of the relationship for this study is that these variables may operate with more immediacy at the level of the person-environment interaction than many other variables that are seen as person variables. In other words, while they can be seen as characteristic styles of the individual, they operate more directly on the environment, and are more likely to be influenced by the outcome, than other more stable personality characteristics. The particular styles that more frequently coincide with what the individual perceives as a satisfactory outcome will gradually become incorporated into the individual's personality structure.

The achievement motivation dimensions that appear to be important in predicting educational attainment from these data are acquisitiveness, dominance and work ethic as discussed above. One reason why educational attainment is important is that it provides one mechanism through which the individual becomes socially mobile. To this end, this study also provides data on the predictors of socio-economic status (Table 2).

In support of the contention that educational status is an important vehicle for social mobility, we find that the first and best predictor of socio-economic status is educational status, accounting for 36.1 per cent of the variance.

Achievement motivation comes next, with the two dimensions of competitiveness and status aspiration between them covering 26.4 per cent of the variance. Other important variables are psychoticism, and possession index.

The relationship between parental SES and own SES does not come out in this data. It is possible that this may be because Lynn *et al.* (1983) used the Hall-Jones index, which has a special category for farmers according to the size of their properties, to categorise SES. The present study used the more commonly used Registrar General's index of occupations. Many would argue that this may not be a good measure of economic disadvantage since the erosion of differentials over the years means that individuals in the manual section may well be earning as much or more than professionals. It is arguable that in rural areas such as the area sampled, at the time of sampling, this trend is not as noticeable as in more urbanised and industrialised settings. Hence SES may still reflect material well-being in this sample. With due awareness of the problems of measurement, it can still be argued that there is evidence of the transmission of disadvantage here. Possession index, which is used as a proxy measure of material well-being, is predictive of SES (Table 2). Again, achievement motivation appears to be a central mediating factor. The direct and indirect predictor routes to socio-economic status can be seen in the path model (Figure 2).

As well as the effect that achievement motivation has on SES via the indirect route through educational attainment, we can also see that it has a direct effect. The dimensions of achievement motivation that are direct predictors of SES are not the same as those that predict educational attainment. Whereas dominance, acquisitiveness, and work ethic predict educational status, the factors that predict SES are status aspiration and competitiveness. The relationship is such that high scores on status aspiration and lower scores on competitiveness predict higher SES, and vice versa. The relationship would not have been observed if a single overall achievement motivation score had been used. This is further validation of the multi-dimensional approach.

The discussion so far has focused on the total sample (N=451). However, there are sex differences, as can be seen from the path models in Figures 3 and 4. The overall trends are similar for the sexes, in that the home background —> personality —> achievement motivation —> educational attainment / socio-economic status model holds for both. However, the weighting of variables differs to some degree, and the differences raise some interesting areas for further investigation. An example is the difference in home background variables which supports the notion that boys and girls elicit different child-rearing practices from parents. Parental encouragement seems to predict educational attainment for boys

through the mediation of the achievement motivation factor of status aspiration. For girls the route is through home background effects on intelligence. The data do not allow further clarification of sex difference effects of home background, but they suggest the need for control of this variable in future research.

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