

Career aspirations and attainment

RUNNING HEAD: CAREER ASPIRATIONS AND ATTAINMENT

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Teenage career aspirations and adult career attainment:  
The role of gender, social background and general cognitive ability

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**Abstract:** In this paper we examine the associations between gender, family background, general cognitive ability ( $g$ ) and career aspirations at early age, and career attainment in mid adulthood drawing on two large representative samples of the British population born in 1958 ( $N = 6,474$ ) and in 1970 ( $N = 5,081$ ). A developmental-contextual model of career development is tested in both age cohorts, using Structural Equation Modelling to map the pathways linking early experiences to adult outcomes. Results show that in both cohorts career aspirations measured at age 16 predict career attainment of cohort members in their mid 30's, even after controlling for family social background and general cognitive ability. Compared to their less ambitious peers those with aspirations for a professional job are more likely to participate in further education, and are more likely to achieve a professional career in their adult years. Regarding gender differences in career pathways, the findings suggest that women are more ambitious in their occupational aspirations than men and more likely to participate in further education. It appears that for women it might be beneficial in the long run if they are optimistic regarding their career potential.

*Key words:* Career aspirations and attainment, gender, general ability, longitudinal, social background, socio-historical context

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### Teenage career aspirations and adult career attainment:

#### The role of gender, social background and general cognitive ability

Adolescence is an important phase in the preparation for adult life, and a critical juncture in occupational development. The hopes and expectations for future careers expressed by young people during the teenage years can potentially have important consequences for their later development. Previous studies have shown that teenage expectations for the future are important predictors of adult attainment, i.e. that young people with high occupational aspirations are more likely to enter a professional career in adulthood (Clausen, 1993; Elder, 1974/1999; Mello, 2008; Schoon, Martin, & Ross, 2007; Schoon & Parsons, 2002). In this paper we are going to extend previous studies and examine gender differences in occupational aspirations and attainment in more detail. We will focus on the association between family social background, general cognitive ability and career development and assess how these differ for men and women. In particular we propose and test a developmental-contextual model of career development to assess gender differences in the pathways linking early experiences to adult outcomes. The model assumes that the influence of family social background and cognitive ability on adult occupational attainment is mediated through job aspirations formulated in adolescence and time spent in education. We furthermore assess the role of a changing socio-historical context in shaping career development. By including data from two British cohorts born in 1958 and 1970 we are able replicate findings in different but comparable samples to gain a better understanding of the generalisability of results.

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### *Gender and occupational development in times of social change*

Despite the fact that women have gained much in terms of educational attainment over the last decades (Buchmann & DiPrete, 2006), there are persisting inequalities in the labour market and the occupational opportunities for women still lag much behind those of men. It has been argued that men and women have different preferences relating to occupational choice, suggesting that women choose less prestigious positions in the labour market (Arbona & Novy, 1991; Herzog, 1982). However, evidence from more recent studies suggests that teenaged girls have become more ambitious concerning their future occupations than boys (Francis, 2002; Mello, 2008; Schoon, 2006; Schoon, Martin, & Ross, 2007). Although young people continue to choose fairly gender-typical occupations, girls were more likely than boys of the same age to aspire to a professional job requiring academic qualifications.

The raised aspirations of women regarding their occupational careers can be explained in part by the economic and social changes that have taken place over the last three decades and that have impacted on gender roles. Equal opportunity programmes may have informed girls about the range of occupations available to them, and encouraged them to pursue a career rather than viewing paid work as a stop-gap before marriage (Arnot, David, & Weiner, 1999). Furthermore, the dramatic increase of female participation in the labour market since the mid 1970s has provided an increased availability of role models that might have encouraged girls to pursue new career avenues (Francis, 2000). Yet, although women now make up almost half of the labour force, proportionately fewer women than men rise to the top of their professions (Joshi & Paci, 1998; Moen, 2001; Scott, Dex, Joshi, Purcell, & Elias, 2008), and even though women

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have now closed the overall gender gap in educational attainment (Buchmann & DiPrete, 2006) they do not receive the same rewards as men for their accomplishments in terms career progression and earnings (Joy, 2003; Marini & Fan, 1997; Purcell, 2002).

The aim of this study is to assess the association between aspiration and attainment among men and women in more detail, taking into account the role of a changing socio-historical context. The link between aspirations and attainment is not yet well understood, and there is a lack of research on the formation of occupational aspirations and their realization, especially among women. Research on gender variation in occupational aspirations and attainment has been limited due to restricted age ranges, or use of small, selected samples. Furthermore, research on occupational development has mostly focused on the experiences of men, and there has been a noted lack of research on women's issues in the workforce (Farmer, 1997; Osipow & Fitzgerald, 1996; Philips & Imhoff, 1997). The study of career development over time requires the use of longitudinal data, and here we draw on evidence from two large scale nationally representative samples born in 1958 and 1970 respectively. Although only born 12 years apart, the two age cohorts have witnessed the dramatic changes regarding gender roles and expectations of women in society. In the UK the Sex Discrimination Act was introduced in 1975, just one year after the 1958 cohort had reached compulsory school leaving age (age 16) and had started setting out to enter the labour market. Have the associations between aspirations and attainment changed for men and women preparing their transition into the labour market just before and after this major break-through in gender equality? And what is the role of family social background and cognitive ability in shaping the transition in times of social change?

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### *A developmental-contextual approach*

In the following we adopt a developmental contextual approach for the study of career development (Vondracek, Lerner, & Schulenberg, 1986; Vondracek, 1998). The model is guided by ecological approaches of human development (Bronfenbrenner & Ceci, 1994), emphasising the role of multiple interacting influences from the micro to the macro context; and the theory of the life course, stressing the embeddedness of individual development in a changing social context (Elder, 1998). Transition experiences and pathways through life are understood as developmental processes extending over time, and being shaped by complex interdependent relationships, including links to one's family of origin and individual agency processes. Emphasising agency as well as social embeddedness of human development makes the approach well suited for a gender sensitive understanding of transition experiences. In particular we will focus on the role of social background and cognitive ability in shaping the expression of career aspirations and subsequent career development.

### *The role of social background in shaping career development*

Many previous investigations have shown that family social background is associated with academic and occupational attainment. Young people from relatively disadvantaged backgrounds are doing less well in school, express lower aspirations, leave school earlier, and are less likely to enter professional careers than their more privileged peers (Schoon, 2006). According to socialization theories young people from more privileged homes have more educational opportunities, greater access to financial resources, role models, occupational knowledge and informal networks (Erikson & Jonsson, 1996; Schoon, Martin, & Ross, 2007; Schoon & Parsons, 2002). The transmission of resources across

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generation has been described by sociologists as ‘social reproduction’ (Bourdieu & Passeron, 1977).

Within approaches of status attainment research it is argued that the effects of socioeconomic origin are mediated through individual factors such as individual aspirations, which in turn are associated with educational achievement and subsequent positions on the occupational ladder (Duncan, Featherman, & Duncan, 1972; Featherman & Hauser, 1978; Sewell, Haller, & Ohlendorf, 1970). However, only very few studies examining status attainment among women were conducted providing inconclusive evidence. Previous studies suggested that the process of status attainment is very similar for men and women (Featherman & Hauser, 1978; McClendon, 1976), while more recent evidence indicates significant differences in the degree to which ability and motivation intervene in the relationship between social background and occupational outcomes (Breen & Goldthorpe, 2002; Schoon, 2008; Sewell, Hauser, & Wolf, 1980).

### *Ability and aspirations*

There is evidence to suggest that young people who do well at school are also more likely to aspire to more prestigious careers (Danzinger, 1983; Fox & Zimmerman, 1985; Hay & Bakken, 1991), while those at the lower end of academic achievements limit their ambitions (Maughan & Hagell, 1996; Rojewski, 1996). It is argued that children with higher ability have more occupational knowledge and perceive more options than those with lower ability (Barclay, 1974). The association between ability and motivation is however not a straightforward one. Previous evidence suggests that girls tend to underestimate their abilities, especially in math and science (Correll, 2004;

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Eccles, Wigfield, & Schiefele, 1998; Entwisle & Baker, 1983), while in other domains, such as English, they rate their competence higher than males (Wigfield et al, 1997).

More recent research, however, indicates a move towards less gender biased attitudes and self concepts (Schilling, Sparfeldt, & Rost, 2006; Tinklin, Croxford, Ducklin, & Frame, 2005; Watt, 2005). There is also evidence to suggest that job aspirations in addition and above self rated ability concepts are crucially important in shaping career development of both men and women, as is the role of social background (Marjoribanks, 1998; Schoon, Ross, & Martin, 2007). Moreover, in the light of generally raised ambitions among young people in recent age cohorts, there are concerns regarding non-aligned ambitions, i.e. high career expectations despite low educational attainment (Schneider & Stevenson, 1999).

Insert Figure 1

In the following we will examine more closely on the role of social background, ability, and job aspirations in influencing career development in a changing social context. Figure 1 gives a diagrammatic depiction of the developmental-contextual model to be tested using structural equation modelling (SEM) (Bollen, 1989). Following the usual SEM conventions, latent variables are shown as circles and manifest variables as rectangles. Single headed arrows represent causal influences. The double-headed arrow represents the correlation between independent variables. Error terms for each manifest variables and disturbance on the latent variables are included in the model (not shown in the diagram). There are independent variables (family social status and childhood cognitive ability),



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mediating variables (aspiration and education) and outcome variables (highest qualifications and occupational status in adulthood).

Family social position and adult social status are assessed as latent variables containing multiple indicators. In recent debates it has been argued that social position should not be conceptualised solely in terms of occupational categories and that a single social class measure is an unreliable and incomplete indicator of social status (Crompton & Scott, 2000). In particular, the combination of occupational class and education has been suggested as appropriate to indicate social position reflecting socio-economic resources as well as cultural characteristics relevant to the study of life chances (Gershuny, 2000). Moreover, the role of parental education characteristics, especially mother's education, has not been included in many models of occupational attainment. Mother's as well as father's education are considered as important aspects of the overall family social position, given that mother's occupation may not constitute an adequate measure of the mother's social position from a stratification perspective (Lampard, 1995). Mother's education might also be an important indicator for gender specific role modeling.

The model assumes that family social status at birth is associated with general childhood cognitive ability. The two variables share some genetic as well as environmental influences, and are operationalised as correlated independent variables. This approach is considered as a preferable, theory-neutral, position until more is known about the causal relations and patterns of interaction of these two variables (Deary et al., 2005).

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It is assumed that family social status and cognitive ability both influence occupational aspirations expressed by young men and women at age 16. Family social status, cognitive ability, as well as occupational aspirations are assumed to predict the time spent in full time education. Furthermore, the effects of family social status and cognitive ability on adult social status attainment are hypothesised to be direct and also partly mediated via job aspirations and education. The paths in the model track development over time. As parental social status and childhood cognitive ability were assessed at an earlier age than the other variables in the model, they are assumed to be causally prior. It is assumed that the paths are similar for men and women, given the assumption of equal life chances.

## METHOD

### *Participants*

The study draws on data collected for the 1958 National Child Development Study (NCDS) and the 1970 British Cohort Study (BCS70), comprising each over 16,000 individuals born in single weeks in 1958 and 1970. Data for cohort members in the 1958 NCDS were collected at birth and at ages 7, 11, 16, 23, 33, 42 and 46 years. For BCS70 data collection sweeps have taken place at birth and when the cohort members were aged 5, 10, 16, 26, 30 and 34 years. The following analysis is based on all respondents for whom complete data was collected at birth and age 10/11, as well as at the follow-up studies at age 34 (BCS70) and 33 (NCDS) respectively. The analytic sample comprises 6474 cohort members in NCDS (51% females) and 5081 in BCS70 (48% females). An analysis of response bias showed that the achieved sample did not differ from the target sample across a

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number of critical variables (social class, parental education, and gender), despite a slight under-representation of males and of the most disadvantaged groups in both cohorts (Elliott & Shepherd, 2006; Plewis, Calderwood, Hawkes, & Nathan, 2004). Bias due to attrition of the sample during childhood has been shown to be minimal (Butler & Bynner, 1997; Davie, Butler, & Goldstein, 1972; Fogelman, 1983). Potential bias due to missing variable information is addressed in the section on estimating the model.

### *Measures*

*Family social status* is indicated through a latent variable combining parental occupational social class and parental education. Parental *occupational social class* was measured by the Registrar General's measure of social class (RGSC) defined according to job status and the associated education, prestige (OPCS & Surveys, 1980) or lifestyle (Marsh, 1986) and is assessed by the current or last held job of the child's father. Where the father was absent, the social class (RGSC) of the mother was used in BCS70, and where there was no father at birth of NCDS cohort members, the mother's father's social class was used. It is coded on a six-point scale: 6 - professional; 5 - managerial and technical; 4 - skilled non-manual; 3 - skilled manual; 2 - partly skilled; and 1 - unskilled (Leete & Fox, 1977)<sup>1</sup>, so a higher score represents a higher level of occupational prestige.

*Parental education* is measured by the age either parent had left full-time education.

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<sup>1</sup> The occupational categories used in the US census and other European countries are similarly based on the skills and status of different occupations (Krieger & Williams, 1997).

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*General cognitive ability* was measured differently in the two cohorts. In NCDS a general ability test has been completed by cohort members at age 11, comprising the assessment of verbal and nonverbal skills. Scores from this test correlate strongly with scores on an IQ-type test used for secondary school selection ( $r=0.93$ ), suggesting that the test can serve as a good proxy for IQ scores (Douglas, 1967). In BCS70 cohort members completed a modified version of the British Ability Scales (BAS), which like the assessment in NCDS can serve as a measure for childhood IQ (Elliott, Murray, & Pearson, 1978). In BCS70 the assessment involved the administration of four sub-scales: word definitions and word similarities which were used to measure verbal ability, and recall of digits and matrices which were used to measure non-verbal ability. For both cohorts a principal components analysis was carried out for each of the verbal and nonverbal subtests in order to establish the presence of a general cognitive ability factor ( $g$ ). In both cohorts the examination of the scree slope suggested the presence of a single component. The first unrotated principal component accounts for 57% of the total variance among the four tests. The factor loading of each of the tests on the first unrotated principal component was 0.74 for matrices, 0.58 for digit recall, 0.83 for word definitions and 0.84 for word similarities. The principal component scores were saved for each subject as an indicator of each person's general cognitive ability ( $g$ ). For ease of interpretation, this index was standardized, within each cohort, to obtain an IQ-type overall  $g$ -score, with a mean of 100 and standard deviation of 15.

*Occupational aspirations* were measured in both cohorts at age 16 by asking young people about their preferred future job. Later the answers in both cohorts were categorised

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using Register General's Social Class (RGSC) and defined on a binary scale with "1" denoting those expecting to pursue professional or managerial occupations and "0" those with occupational choices aiming at skilled, semi-skilled, or unskilled jobs. The use of a one-item measure of occupational aspirations is justified, since expressed interest in a profession has been shown to predict the category of a person's future occupation (Dolliver, 1969; Holland, Gottfredson, & Baker, 1990; McLaughlin & Tiedeman, 1974; Whitney, 1969).

*Education* is measured at age 33 in NCDS and 34 in BCS70 and was defined as the indicator of the age of finishing full-time education.

*Adult Social Position* was a latent variable defined in the model by the two observed variables: the adult occupational status and highest qualification achieved by age 33 (NCDS) and age 34 (BCS70), respectively. The adult occupational status was classified in both cohorts according to the registrar general scale (RGSC) and coded on the same six-point scale as family social status: 6 - professional; 5 - managerial and technical; 4 - skilled non-manual; 3 - skilled manual; 2 - partly skilled; and 1 - unskilled (Leete & Fox, 1977). The highest educational qualifications obtained by cohort members in their early 30's, comprise information on both academic and vocational qualifications, and were coded in both cohorts to the six-point scale corresponding to English schooling system: (0) - no qualifications; (1)-Certificate of Secondary Education (CSE) grades 2-5, equivalent to National and Vocational Qualifications (NVQ) 1; (2) – Certificate of Secondary Education grade 1, equivalent to O-level and NVQ 2; (3) – A-level, equivalent

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to NVQ 3; (4) - degree or diploma, equivalent to NVQ 4; (5) – Higher degree equivalent to NVQ 5.

### *Statistical analysis*

All SEM analyses were carried out using the software package Amos 7. The program applies a robust full information EM estimator that corrects for bias under the assumption that missing data are missing at random (Little & Rubin, 2002). In line with current practice, several criteria were used to assess the fit of the data to the model. The  $\chi^2$  statistic is overly sensitive to model misspecification when sample sizes are large or the observed variables are non-normally distributed. The root mean square error of approximation (RMSEA) gives a measure of the discrepancy in fit per degrees of freedom (values below .05 indicates a good fit). The final index of choice is the normed fit index (NFI) where values above .90 indicate acceptable fit (Bentler, 1990).

In a first step the strengths of the associations between variables included in the model is established. In a next step the pathways linking social position at birth and childhood cognitive ability to adult social status are unpacked, as described in Figure 1. Differences in means and pathway coefficients are tested using *t* tests.

## RESULTS

Table 1 and 2 give the correlations between the observed variables, as well as the means and standard deviations for both cohorts and for men and women, respectively. Higher parental social status and childhood cognitive ability are significantly related to higher occupational aspirations, higher age at leaving full-time education, higher educational

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attainment and occupational status in young adulthood. Teenage occupational aspirations were significantly associated with age leaving full-time education, highest qualifications obtained, and adult occupational attainment. Age leaving education had strong associations with highest qualifications and occupational attainment in young adulthood. The similar levels of association between parental social status indicators and own status attainment suggest that social mobility has changed little for the two cohorts.

Insert Table 1 and 2

The means of the variables measured in the two cohorts suggest an upward shift regarding occupational aspirations, age leaving education, highest qualifications achieved, and adult occupational status - possibly reflecting changing labour market opportunities, increasing participation in education, and changing occupational expectations. Comparing the means for men and women in both cohorts suggest significant gender differences ( $p > .002$ ) in childhood cognitive abilities, occupational aspirations and age leaving full-time education. Women in NCDS show slightly higher general cognitive ability level than men, while in BCS70 men are scoring a little higher than women. This difference might be due to the different measures of cognitive abilities used in the two cohorts. Although both assessments are considered a good proxy for IQ levels, they might be tapping different aspects of verbal and nonverbal skills. Furthermore, in NCDS cohort cognitive assessment comprised two subtests completed at age 11, while in BCS70 four subscales were administered at age 10, before entry into secondary schooling. In both cohorts women report significantly higher occupational aspirations and stay in full-time education slightly longer than men.

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Regarding occupational status in young adulthood the findings suggest that in NCDS men had higher qualifications  $F(1, 6472) = 4.69, p = 0.03$  and occupational social status (RGSC)  $F(1, 6472) = 36.86, p = 0.000$ , while in BCS70 the difference between qualifications of men and women in BCS70 was not statistically significant, and the mean score of occupational status is slightly higher for women than men  $F(1, 5079) = 285.09, p = 0.000$ . However, exploring gender differences in adult occupational status in more detail shows a smaller proportion of women in high and low prestige jobs when compared to men (Table 3).

Insert Table 3 about here

This finding replicates previous studies (McClendon, 1976; Treiman & Terrell, 1975), reporting similarity of the male and female means in occupational attainment, yet a slightly smaller female standard deviation reflecting the concentration of women in medium level occupations, mostly skilled nonmanual. The mean for highest educational qualifications, another indicator of adult social status used in the model, is higher for men than for women in NCDS only. Women born in 1958 were less likely than men to obtain higher degree level qualifications, although in the later born cohort women are catching up.

In a next step the pathways linking family socio-economic background and cognitive ability to own social status attainment were assessed. The model described in Figure 1 was fitted to the data, using the software package Amos 7. A path-type analysis was used,



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with a mixture of manifest and latent variables. The models were fitted separately for men and women in each cohort. Cohort and gender differences in path coefficients were tested using t-tests.

Insert Figure 2 and 3

Figures 1 and 2 show the path coefficients for men and women in the 1958 and 1970 cohorts, respectively. The numerical values refer to standardised regression weights that may be squared to obtain the variance shared by adjacent variables. All paths in the model were significant (parameter estimates divided by their standard errors), and the model provides a good fit to the data for both men and women in both cohorts. Parental social status is associated significantly with childhood cognitive ability. Although the association is strong, it does not explain more than 20% of the variation in cognitive ability. The association between parental social status and cognitive ability is slightly higher in BCS70 than in NCDS, possibly indicating that greater social inequality in academic attainment in later born cohort. Yet, it might also be possible that the difference in association is due to the different measurements of cognitive abilities in both cohorts.

Both social background and cognitive ability are associated significantly with occupational aspirations, although there appear to be cohort and gender differences in the associations<sup>2</sup>. Among men in the NCDS cohort job aspirations appear to more strongly influenced by cognitive ability than by social background, while for women in NCDS the association is of similar strength. Among men and women in BCS70 the influence of

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<sup>2</sup> Significant differences in path coefficients reported in the following are  $p > .01$  or greater.

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family background on job aspirations appears to be stronger than that of cognitive ability, suggesting that in the later born cohort the formation of job aspirations is more strongly influenced by socio-economic factors than by own ability, especially for men. It also appears that compared to men, women's job aspirations are less strongly influenced by cognitive ability, especially among women in NCDS. This might suggest that women, especially those in the earlier born cohort, tend to be overambitious regarding their occupational careers, that is their career aspirations and academic attainment are not in alignment (Schneider & Stevenson, 1999).

Teenage job aspirations are associated significantly with time spend in full-time education. While in the 1958 cohort it is of similar strength for both genders, in the 1970 cohort this link is stronger for men than for women. This might suggest that for young men the role of job aspirations is becoming more important in influencing their participation in further and higher education. However, in both cohorts time spend in full-time education is more strongly influenced by social background than by cognitive ability, suggesting persisting inequalities in educational opportunities for both men and women.

Teenage job aspirations as well as time spend in education are associated significantly with achieved adult social status. This applies for both cohorts, although the link between job aspirations and adult social status has reduced slightly for the later born cohort, while the link between education and adult social status has increased, especially among men. Generally the time spend in full-time education is the strongest predictor of adult social status in both cohorts.

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There is also a significant direct influence of general cognitive ability on adult social status, which appears to be stronger in the 1958 cohort than in BCS70, as well as a direct influence of family social background, which has become stronger in particular for women in the BCS70 cohort. This finding suggests that job aspirations and time spent in education only partially mediate the influence of social background and cognitive ability on adult social status.

## DISCUSSION

The present study showed that gender differences in occupational attainment, although reversed in favor of women in the recent cohorts if using average social status, still persist in the occupational status distribution. Cohort differences in the strengths of the pathway coefficients appear to be stronger than gender differences, highlighting the role of social change in the career development of men and women. The findings confirm that men and women with high occupational aspirations at age 16 show considerable persistence in pursuing their goals. Compared to their less ambitious peers they are more likely to participate in further education, and are more likely to achieve a professional career in their adult years. The role of teenage job aspirations as a motor in shaping career development of men and women could thus be validated in both cohorts, even after controlling for family social background and general cognitive ability. Furthermore, social background continues to play a significant role in shaping career development of young people, and there is support for the hypothesis that social background and cognitive ability might in part operate via teenage job aspirations and participation in education, which, in turn, influence social status attainment.

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Parental social status, childhood cognitive ability, occupational aspirations, and education are all significant determinants of adult social status attainment, yet there appear to be significant gender and cohort differences in the interlinkages between these variables. In both cohorts women report higher job aspirations than men, and women in the later born cohort have higher aspirations than those born 12 years earlier. The association between cognitive ability and job aspirations appears to be lower among women than among men and has reduced for the later born cohort, especially among men. This finding suggests that a.) women might be 'overambitious' compared to men, that their high aspirations are not necessarily linked to their academic attainment, that they are misaligned (Schneider & Stevenson, 1999); and b.) that job aspirations in the later born cohort might have generally increased even for those with lower academic capabilities. High aspirations, in turn, are linked to extended participation in further education, as well as high adult social status among both men and women. The findings could indicate that in the long run it might be beneficial for women to be slightly overambitious, although the evidence is stronger for women in the 1958 than the 1970 born cohort. The finding might however, just be a reflection of the increasing number of men and women aiming for professional jobs and participating in further education, suggesting that opportunities for career development are affected by prevailing socio-economic conditions, as for example education and training opportunities and conditions of the labour market (Elder, 1998). Although only born 12 years apart, the later born cohort grew up in a climate of increasing gender equality and had witnessed dramatic changes in educational and labour market opportunities, characterised by a decline in manual occupations, an increasing demand for highly skilled jobs, as well as an

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increasing participation of women in further education and the labour market (Schoon, 2006).

For men and women in both cohorts time spend in full-time education is the most important determinant of social status attainment, independent of job aspirations, cognitive ability and parental social status. Participation in further education, however, remains to be more strongly influenced by social background than by cognitive ability, suggesting persistent inequality in educational opportunities (Bynner & Joshi, 2002). Taken together with the finding that career aspirations in the later born cohort are more strongly influenced by social background than by cognitive ability, our study suggests that despite efforts to expand participation in further education, young men and women from relative disadvantaged background are less likely to aspire to a professional career and are more likely to leave school early than their more privileged peers, which in turn is associated with lower social status in adulthood.

Another interesting finding is that childhood cognitive ability is more strongly related to status attainment in young adulthood than to occupational aspirations expressed as a teenager or time spend in education. Likewise in other studies it was reported that the effects of cognitive ability increase with age, as individuals move through their careers (Deary et al., 2005; Jencks, 1979). Yet, our findings also suggest a decreasing direct influence of childhood cognitive ability on adult social status attainment in the later born cohort, especially among men. This might suggest a diminishing influence of cognitive ability on social status attainment independent of education, lending support to the assumption that the most privileged have benefited most from the expansion of further

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education and changing labour markets, not the most able (Galindo-Rueda & Vignoles, 2005; Schoon, 2008).

Women in the later born cohort appear to be catching up with men regarding their academic and occupational attainment, and they appear to achieve parity in their adult social standing. However, although the average prestige distributions appear to be quite similar, the slightly smaller standard deviation for females suggests differences in the jobs occupied by men and women. As reported in other studies, women remain concentrated in particular occupations, as for example in teaching and health professions, which are generally less well paid than the more male dominated occupations (Crompton, 1999, McClendon, 1976; Treiman & Terrell, 1975).

In interpreting the findings some strengths and weaknesses of our study have to be considered. The study is based on two large, fairly representative samples of the UK population that were followed from birth into the adult years, offering the opportunity to conduct a cross-cohort comparison of individuals born 12 years apart, which is too rarely done. As with all research using cohort studies, this work is constrained by having to make the best use of the available data. Another limitation is the attrition of respondents over time. Response bias at the individual level would tend to underestimate the effect of social disadvantage, as sample attrition is greatest among cohort members in relative disadvantaged circumstances. Here we used a robust full information EM estimator that corrects for bias under the assumption that missing data are missing at random (Little & Rubin, 2002), as a 'best effort' technique to deal with missingness in the data, although our findings might be slight underestimates of the role of socio-economic adversity. Nonetheless, drawing on two large scale samples of similar age and using similar

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measures in two cohorts provides crucial evidence on the pathways and processes linking early childhood experiences to adult outcomes using prospective longitudinal data.

Although the findings are based on data collected in the UK the findings have general implications.

It appears that career development remains closely intertwined with social background and current socio-economic conditions. Although young men and especially young women have become more ambitious in their career aspirations and have increased their efforts in gaining academic qualifications, traditional sorting principles continue to influence the distribution of life chances and opportunities. While attitudinal barriers seem to have decreased, structural barriers remain in place. The findings thus highlight the need to examine the dynamic interactions between structural influences and individual decision making and choice. For a better understanding of gender differences in career development it is necessary to move beyond a focus on individualistic preferences and to take into account the role of structural factors constraining choice and opportunities. Failure to acknowledge constrained agency may mask some of the processes by which gender inequality is perpetuated.

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Table 1

*Pearson Correlations Among Social Background, Cognitive Ability, Aspirations, Education, and Adult Social Status (NCDS: N Men = 3186, N Women = 3288)*

Variables	Correlation								Mean male
	1	2	3	4	5	6	7	8	SD
1. Parental RGSC	–	.412	.346	.311	.232	.363	.235	.345	3.16 (1.24)
2. Father's age leaving school	.390	–	.500	.247	.217	.337	.199	.281	14.95 (1.75)
3. Mother's age leaving school	.340	.497	–	.233	.188	.374	.194	.306	14.91 (1.35)
4. General cognitive ability	.285	.232	.234	–	.355	.425	.349	.545	99.17 (15.03)
5. Job aspirations	.202	.157	.184	.256	–	.429	.370	.333	.21 (.40)
6. Education (age 33)	.362	.348	.336	.437	.389	–	.398	.644	17.06 (1.99)
7. Own RGSC at age 33	.311	.253	.230	.447	.406	.481	–	.515	3.77 (1.31)
8. Highest Qualification	.327	.268	.255	.545	.239	.574	.564	–	2.46 (1.38)
Mean female SD	3.16 (1.23)	14.97 (1.73)	14.96 (1.39)	101.34 (14.57)	.29 (.45)	17.15 (1.92)	3.74 (1.28)	2.29 (1.38)	

Note: All correlation coefficients are significant ( $p < .001$ ). Values for male are above the diagonal, and values for female are below the diagonal. Standard deviations (SD) are given in parentheses. Variables were scored such that a higher score indicated a higher social class (RGSC), higher cognitive ability, greater aspirations, extended education, and higher qualifications attained.

## Career aspirations and attainment

Table 2

*Pearson Correlations Among Social Background, Cognitive Ability, Aspirations, Education, and Adult Social Status (BCS70: N Men = 2669 and N Women = 2412)*

	Variables	Correlation								Mean male
		1	2	3	4	5	6	7	8	SD
1.	Parental RGSC	–	.428	.349	.313	.261	.330	.273	.307	3.22 (1.22)
2.	Father's age leaving school	.452	–	.473	.281	.232	.295	.246	.284	15.41 (1.02)
3.	Mother's age leaving school	.356	.483	–	.264	.209	.322	.240	.297	15.42 (1.14)
4.	General cognitive ability	.324	.284	.278	–	.293	.377	.411	.489	100.47 (15.31)
5.	Job aspirations	.142	.172	.137	.205	–	.492	.321	.402	.26 (.44)
6.	Education (age 34)	.338	.346	.326	.387	.357	–	.448	.618	17.34 (2.50)
7.	Own RGSC at age 34	.207	.186	.172	.347	.230	.368	–	.542	3.95 (1.27)
8.	Highest Qualification	.333	.299	.293	.468	.329	.592	.440	–	2.40 (1.42)
	Mean female	3.22	15.40	15.45	99.53	.34	17.53	4.14	2.57	
	SD	(1.20)	(1.06)	(1.18)	(14.66)	(.47)	(2.41)	(1.16)	(1.37)	

Note: All correlation coefficients are significant ( $p < .001$ ). Values for male are above the diagonal, and values for female are below the diagonal. Standard deviations (SD) are given in parentheses. Variables were scored such that a higher score indicated a higher social class (RGSC), higher cognitive ability, greater aspirations, extended education, and higher qualifications attained.

## Career aspirations and attainment

## Career aspirations and attainment

Table 3

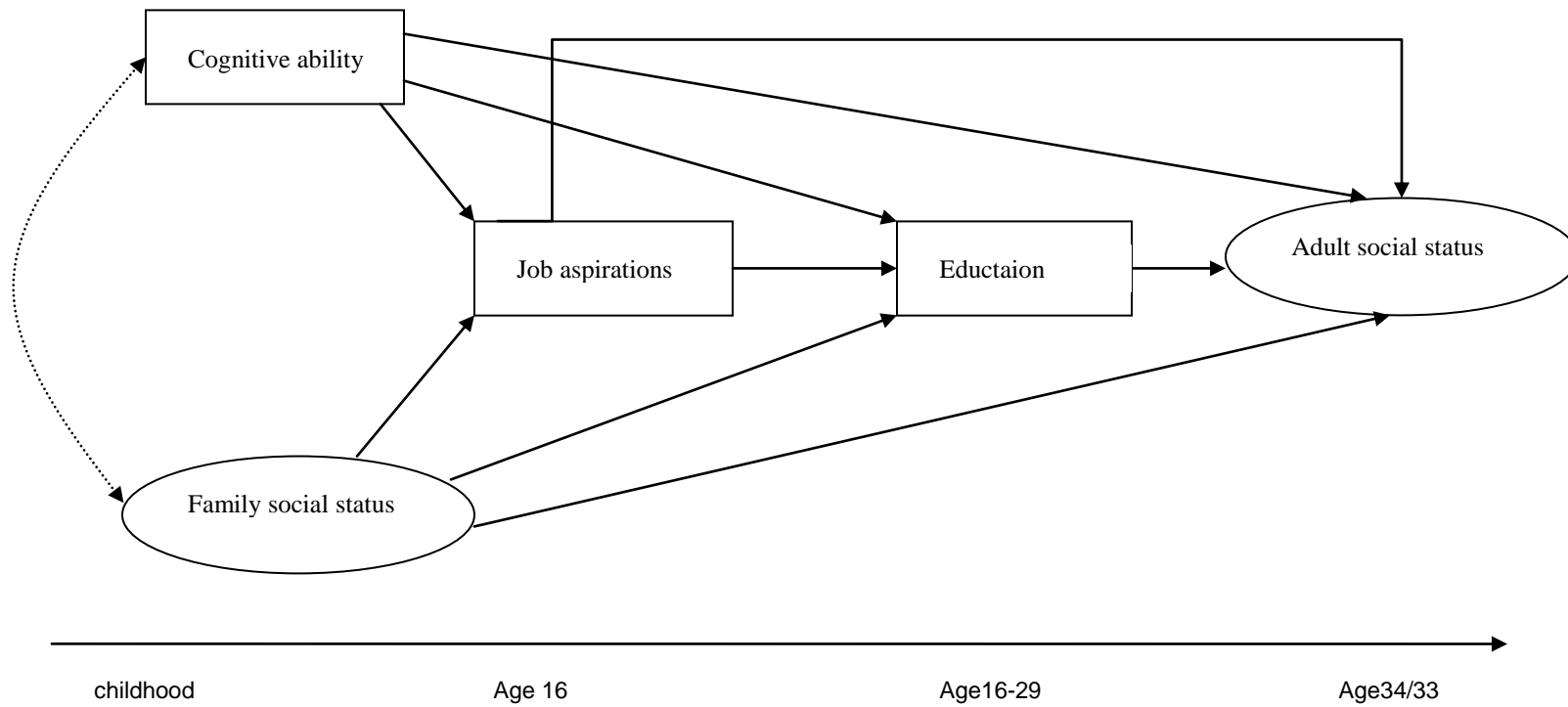
Percentage of Men and Women in NCDS and BCS70 cohorts in six of occupational categories of RGCS

	NCDS		BCS	
	Men	Women	Men	Women
<i>N</i>	3186	3288	2669	2412
Professional	7	2	8	5.5
Managerial and technical	33	30	38	41
Skilled non-manual	12	37	11	33
Skilled manual	33	7	32	6
Partly skilled	12	18	9	13
Unskilled	3	5	2.5	2

## Career aspirations and attainment

## Career aspirations and attainment

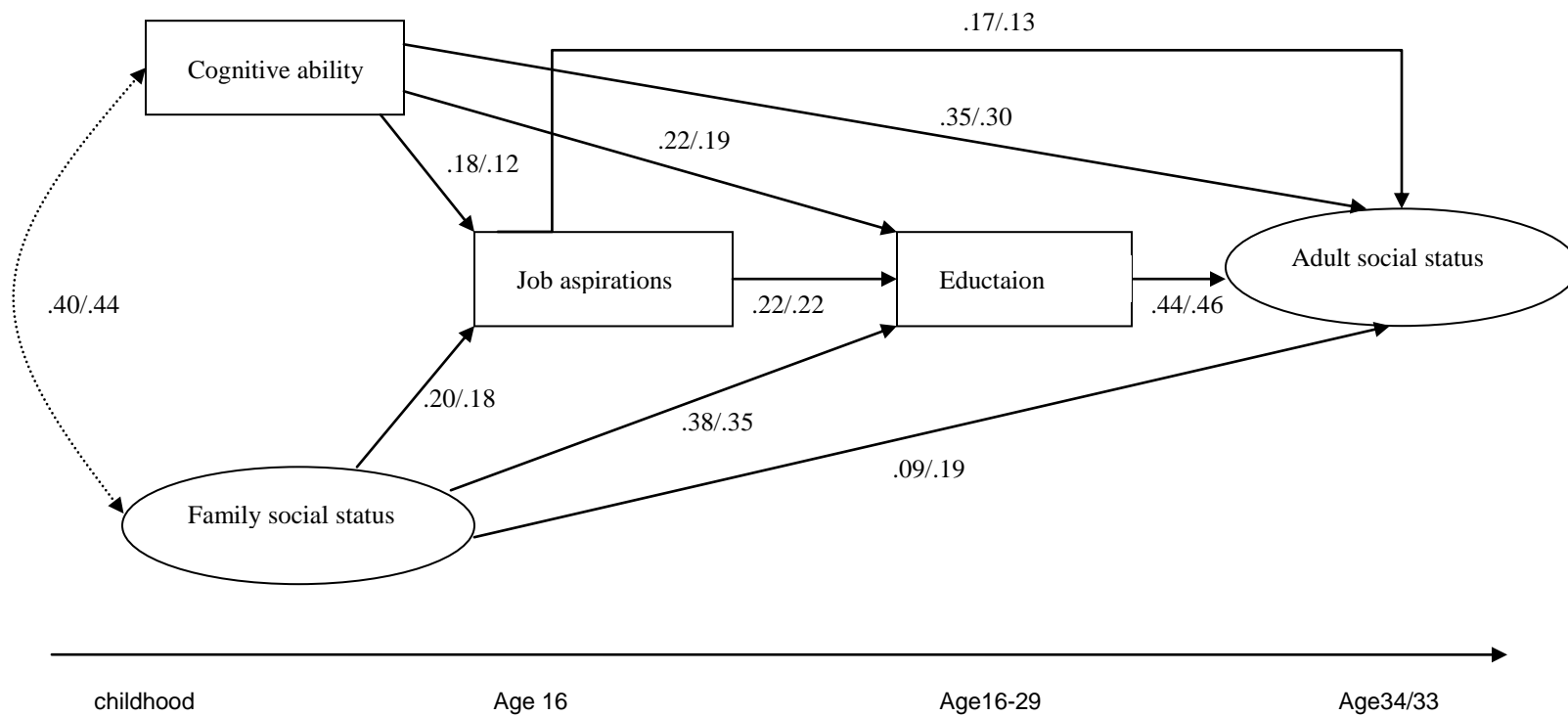
Figure 1 Developmental contextual model of status attainment



*Note.* The usual SEM convention was used, with latent variables shown as circles and manifest variables as rectangles. Single-headed arrows represent causal influences. The double-headed arrow represents the correlation between variables. Error terms for each observed and latent variables are included in the model (not shown in the diagram).

## Career aspirations and attainment

Figure 2 Pathway Model Predicting Social Status Attainment of Women (NCDS/BCS)



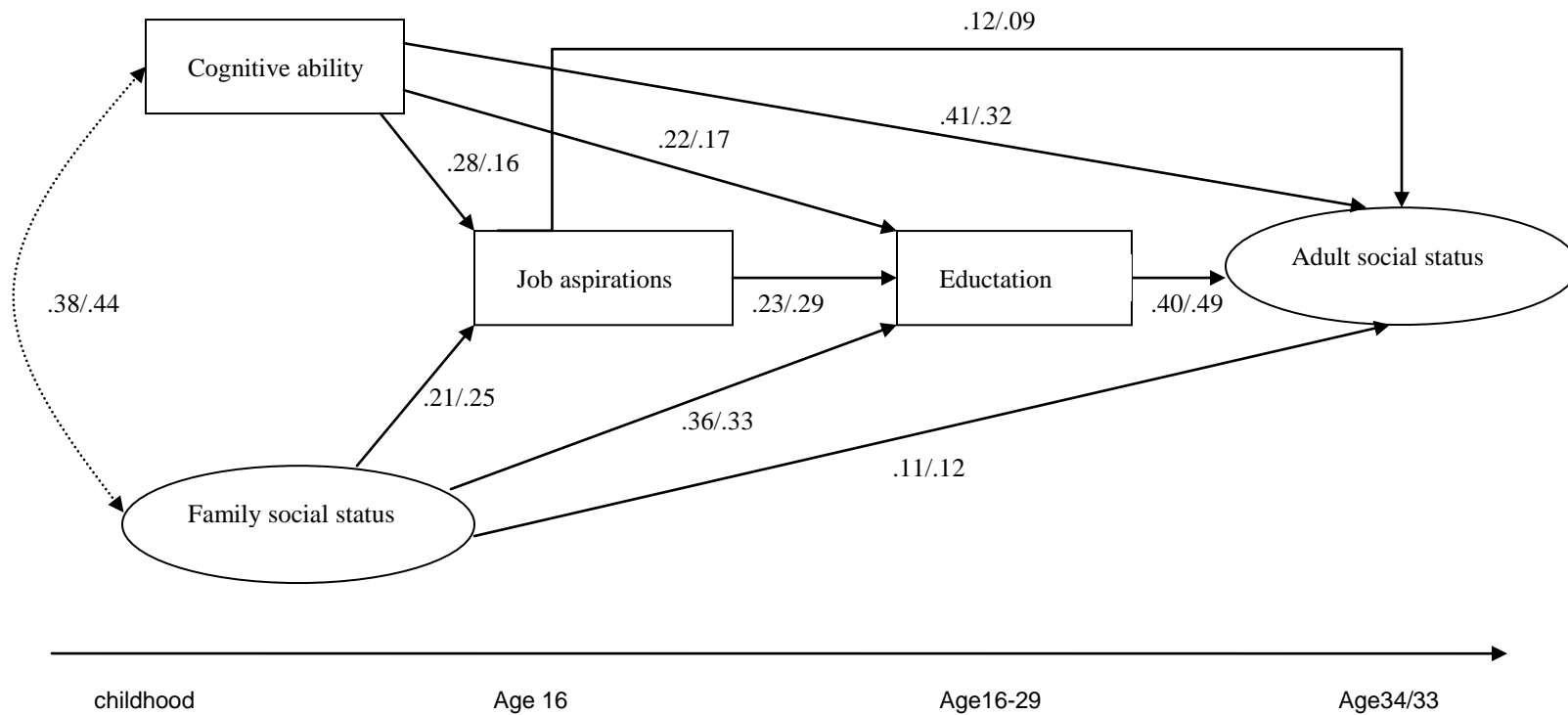
*Note.* The diagram shows standardized coefficients.

Fit indexes for BCS women:  $\chi^2 = 95.0$ ,  $df = 13$ ,  $p = .000$ , NFI = 0.985, RMSA = 0.037

Fit indexes for NCDS women:  $\chi^2 = 123.25$ ,  $df = 13$ ,  $p = .000$ , NFI = 0.982, RMSA = 0.050

## Career aspirations and attainment

Figure 3 Pathway Model Predicting Social Status Attainment of Men (NCDS/BCS)



*Note.* The diagram shows standardized coefficients.

Fit indexes for BCS men:  $\chi^2 = 166.64$ ,  $df = 13$ ,  $p = .000$ , NFI = 0.984, RMSA = 0.040

Fit indexes for NCDS men:  $\chi^2 = 78.93$ ,  $df = 13$ ,  $p = .000$ , NFI = 0.988, RMSA = 0.040



## References

- Arbona, C., & Novy, D. M. (1991). Career aspirations and expectations of Black, Mexican American, and White students. *The Career Development Quarterly*, 39, 231-239.
- Arnot, M., David, M., & Weiner, G. (1999). *Closing the gender gap*. Cambridge: Polity Press.
- Barclay, L. K. (1974). The emergence of vocational expectations in preschool children. *Journal of Vocational Behavior*, 4, 104.
- Bentler, P. M. (1990). Comparative Fit Indexes in Structural Models. *Psychological Bulletin*, 107(2), 238-246.
- Bollen, K. A. (1989). *Structural Equations with Latent Variables*. New York: Wiley.
- Bourdieu, P., & Passeron, J. (1977). *Reproduction in Education, Society and Culture* (Vol. 5). London: Sage Publications.
- Buchmann, C., & DiPrete, T. A. (2006). The growing female advantage in college completion: The role of family background and academic achievement. *American Sociological Review*, 71, 515-541.
- Breen, R., & Goldthorpe, J. H. (2002). Merit, mobility, and method: Another reply to Saunders. *British Journal of Sociology*, 53, 575-582.
- Bronfenbrenner, U. & Ceci, S.J. (1994). Nature-nurture reconceptualized in developmental perspective: a bio-ecological model. *Psychological Review*, 101, 568-586
- Butler, N., & Bynner, J. (1997). *1970 British Cohort Study: Ten-year Follow-up* Colchester, Essex UK Data Archive
- Bynner, J., & Joshi, H. (2002). Equality and opportunity in education: evidence from the 1958 and 1970 birth cohort studies. *Oxford Review of Education*, 28(4), 405-425.
- Clausen, J. A. (1993). *American lives: looking back at the children of the Great Depression*. Berkeley: University of California Press.
- Correll, S. J. (2004). Constraints into preferences: Gender, status, and emerging career aspirations. *American Sociological Review*, 69(1), 93-113.
- Crompton, R. (Ed.). (1999). *Restructuring gender relations and employment* Oxford: Oxford University Press.
- Crompton, R., & Scott, J. (2000). Introduction: the state of class analysis. In R. Crompton, F. Devine, M. Savage & J. Scott (Eds.), *Renewing Class Analysis*. Oxford: Blackwell/The Sociological Review.
- Danzinger, N. (1983). Sex-related differences in the aspirations of high school students. *Sex Roles*, 9, 683-694.
- Davie, R., Butler, N. R., & Goldstein, H. (1972). *From birth to seven: the second report of the National Child Development Study (1958 cohort)*. London: Longman in association with the National Children's Bureau.
- Deary, I. J., Taylor, M. D., Hart, C. L., Wilson, V., Davey Smith, G., Blane, D., et al. (2005). Intergenerational mobility and mid-life status attainment: Influences of childhood intelligence, childhood social factors, and education. *Intelligence*, 33, 455-472.
- Dolliver, R. H. (1969). Strong Vocational Interest Blank versus expressed vocational interests: A review. *Psychological Bulletin*, 72, 95-107.
- Douglas, J. W. B. (1967). *The home and the school*. London: Panther Books.

## Career aspirations and attainment

- Duncan, O. D., Featherman, D. L., & Duncan, B. (1972). *Socioeconomic background and achievement*. New York: Seminar Press.
- Eccles, J. S., Wigfield, A., & Schiefele, U. (1998). Motivation to succeed. In W. Damon & N. Eisenberg (Eds.), *Handbook of child psychology (5th edition)* (Vol. III, pp. 1017-1095). New York: Wiley.
- Elder, G. H. (1998). The life course as developmental theory. *Child Development*, 69(1), 1-12.
- Elliott, C. D., Murray, D., & Pearson, L. (1978). *British Ability Scales* Windsor: National Foundation for Educational Research.
- Elliott, J., & Shepherd, P. (2006). Cohort profile of the 1970 British Birth Cohort (BCS70). *International Journal of Epidemiology*, 35, 836-843.
- Entwisle, D. R., & Baker, D. P. (1983). Gender and young children's expectations for performance in arithmetic. *Developmental Psychology*, 19, 200-209.
- Erikson, R., & Jonsson, J. O. (1996). Explaining Class Inequality in Education: The Swedish Test Case. In R. Erikson & J. O. Jonsson (Eds.), *Can education be equalized? : the Swedish case in comparative perspective* (pp. 1-63). Boulder, Colorado; Oxford: Westview Press.
- Farmer, H. (1997). *Diversity & Women's career development*. London: Sage.
- Francis, B. (2000). *Boys, girls and achievement: addressing the classroom issues*. London: Routledge Falmer.
- Francis, B. (2002). Is the future really female? The impact and implications of gender for 14-16 year olds' career choices. *Journal of Education and Work*, 15(1), 75-88.
- Fox, L. H., & Zimmerman, W. Z. (1985). Gifted women. In J. Freeman (Ed.), *The psychology of gifted children* (pp. 219-243). New York: Wiley.
- Gassin, E. A., Kelly, K. R., & Feldhausen, J. F. (1993). Sex differences in the career development of gifted youth. *School Counselor*, 41, 90-105.
- Gershuny, J. (2000). Social position from narrative data. In R. Crompton, F. Devine, M. Savage & J. Scott (Eds.), *Renewing Class Analysis*. Oxford: Blackwell/The Sociological Review.
- Gottfredson, L. S. (1981). Circumscription and Compromise - a Developmental Theory of Occupational Aspirations. *Journal of Counseling Psychology*, 28(6), 545-579.
- Gottfredson, L. S., & Lapan, R. T. (1997). Assessing gender-based circumscription of occupational aspirations. *Journal of Career Assessment*, 5(4), 419-441.
- Herzog, A. R. (1982). High school senior's occupational plans and values: Trends in sex differences 1976 through 1980. *Sociology of Education*, 55, 1-13.
- Holland, J. L. (1985). *Making vocational choices (2nd ed.)*. Englewoods Cliffs, NJ: Prentice Hall.
- Holland, J. L., Gottfredson, G. D., & Baker, H. G. (1990). Validity of Vocational Aspirations and Interest Inventories - Extended, Replicated, and Reinterpreted. *Journal of Counseling Psychology*, 37(3), 337-342.
- Joshi, H., & Paci, P. (1998). *Unequal pay for men and women: evidence from the British Birth Cohort Studies*. London: MIT Press.
- Joy, L. (2003). Salaries of recent male and female college graduates: educational and labour market effects. *Industrial and labor relations review*, 56, 606-621.

## Career aspirations and attainment

- Lampard, R. (1995). Parents' Occupation and their children's occupational attainment: A contribution to the debate on the class assignment of families. *Sociology*, 29, 715-728.
- Leete, R., & Fox, J. (1977). Registrar General's social classes: origins and users. *Population Trends*, 8, 1-7.
- Little, R. J. A., & Rubin, D. B. (2002). *Statistical analysis with missing data, 2nd edition*. Hoboken: Wiley.
- Marsh, C. (1986). Social class and occupation. In R. G. Burgess (Ed.), *Key Variables in Social Investigation*. London: Routledge.
- Mau, W. C., & Bikos, L. H. (2000). Educational and vocational aspirations of minority and female students: A longitudinal study. *Journal of Counseling and Development*, 78, 186-194.
- Maughan, B., & Hagell, A. (1996). Poor readers in adulthood: Psychosocial functioning. *Development and Psychopathology*, 8(2), 457-476.
- McClendon, M. J. (1976). The occupational status attainment process of males and females. *American Sociological Review*, 41, 52-64.
- McLaughlin, D. H., & Tiedeman, D. V. (1974). Eleven-year career stability and change as reflected in the Project Talent data through the Flanagan, Holland, and Roe Occupational Classification Systems. *Journal of Vocational Behavior*, 5, 177-196.
- Marini, M. M., & Fan, P.-L. (1997). The gender gap in earnings at career entry. *American Sociological Review*, 62, 588-604.
- Mello, Z. R. (2008). Gender variation in developmental trajectories of educational and occupational expectations and attainment from adolescence to adulthood. *Developmental Psychology*, 44(4), 1069-1080.
- Mickelson, R. A. (1989). Why does Jane read and write so well? The anomaly of women's achievement. *Sociology of Education*, 62, 47-63.
- Moen, P. (Ed.). (2003). *It's about time. Couples and careers*. Ithaca: Cornell University Press.
- OPCS (1980). *Classification of occupations and coding index*. London: H.M.S.O.
- Osipow, S. H., & Fitzgerald, L. (1996). *Theories of career development (4th edition)*. New York: Allyn & Bacon.
- Pallas, A. M. (2004). Educational transitions, trajectories, and pathways. In J. T. Mortimer & M. J. Shanahan (Eds.), *Handbook of the Life Course* (pp. 165-184). New York: Springer.
- Philips, S. D., & Imhoff, A. R. (1997). Women and career development: A decade of research. *Annual Review of Psychology*, 48, 31-59.
- Plewis, I., Calderwood, L., Hawkes, D., & Nathan, G. (2004). *National Child Development Study and 1970 British Cohort Study. Technical Report: Changes in the NCDS and BCS70 populations and samples over time*. London: Institute of Education, Centre for Longitudinal Studies.
- Purcell, K. (2002). *Qualifications and careers: Equal opportunities and earning among graduates*. Manchester: EOC: Working Paper Series 1.
- Schoon, I. (2006). *Risk and resilience. Adaptations in changing times*. Cambridge: Cambridge University Press.
- Schoon, I., Martin, P., & Ross, A. (2007). Career transitions in times of social change. His and her story. *Journal of Vocational Behavior*, 70(1), 78-96.

## Career aspirations and attainment

- Schoon, I., & Parsons, S. (2002). Teenage aspirations for future careers and occupational outcomes. *Journal of Vocational Behavior*, 60(2), 262-288
- Scott, J., Dex, S., Joshi, H., Purcell, K., & Elias, P. (Eds.). (2008). *Women and employment: Changing lives and new challenges* Edward Elgar.
- Schoon, I., Ross, A., & Martin, P. (2007). Science related careers. Aspirations and outcomes in two British Cohort Studies. *Equal Opportunities International*, 26(2), 129-148
- Schneider, B. and D. Stevenson. 1999. *The ambitious generation. America's teenagers, motivated but directionless*. New Haven and London: Yale University Press.
- Scott, J., Dex, S., Joshi, H., Purcell, K., & Elias, P. (Eds.). (2008). *Women and employment: Changing lives and new challenges* Edward Elgar.
- Sewell, W. H., Haller, A. O., & Ohlendorf, G. W. (1970). The educational and early occupational status attainment process: Replication and revision. *American Sociological Review*, 35, 1014-1027.
- Sewell, W. H., Hauser, R. M., & Wolf, W. C. (1980). Sex, schooling, and occupational status. *The American Journal of Sociology*, 86(3), 551-583
- Shanahan, M. J., Mortimer, J. T., & Krüger, H. (2002). Adolescence and adult work in the twenty-first century. *Journal of Research on Adolescence*, 12(1), 99-120.
- Super, D. (1980). A life-span, life space approach to career development. *Journal of Vocational Behavior*, 16, 282-298.
- Tinklin, T., Croxford, L., Ducklin, A., & Frame, B. (2005). Gender and attitudes to work and family roles: The views of young people at the millennium. *Gender and Education*, 17, 129-142.
- Treiman, D. J., & Terrell, K. (1975). Sex and the process of status attainment: a comparison of working women and men. *American Sociological Review*, 40, 174-200.
- Vondracek, F. W., Lerner, R. M., & Schulenberg, J. E. (1986). Career Development: A life-span developmental approach. In. Hillsdale, NJ: Erlbaum.
- Watt, H. M. G. (2005). Explaining gendered math enrolments for NSW Australian secondary school students. *New Directions in Child and Adolescent Development*, 110, 15-29.
- Whitney, D. R. (1969). Predicting from expressed vocational choices: A review. *Personnel and Guidance Journal*, 48, 279-286.