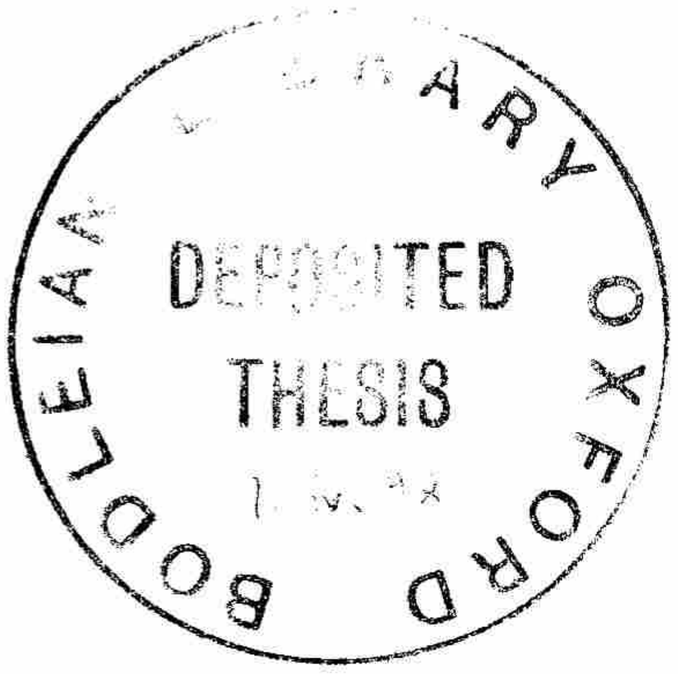
Meritocracy Revisited:
A Disaggregated Approach to the Study of Educational and Occupational Attainment in Britain

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Abstract

Using data from the National Child Development Study, this thesis seeks to examine educational and occupational attainment in Britain by applying a disaggregated approach. It studies subject choice in higher education and sectoral differences in occupational attainment. In other words, this study is about whether meritocracy operates to different extents between different sectors of the labour market.

The conventional definition of meritocracy is adopted in this thesis where achieved characteristics (measured by formal qualifications obtained) form the principle criteria for allocating individuals to different social positions. Using bivariate, multivariate analysis and logistic regression, this thesis investigates the NCDS cohort's access to higher education and to different subject groups; their economic activities in 1981; their first job and 1991 job attainment.

By applying cultural capital theory, this thesis demonstrates that the level of qualification, as well as the subject of study in higher education are closely related to the social and cultural background of individuals. Inequalities in the attainment of a degree qualification are not just a matter of the 'level' of attainment, but also a matter of access to certain faculties or subjects. Subject choices of students from lower social origins are limited by their class backgrounds. In contrast, there is a link between privileged backgrounds, private selective schooling and 'elite' subjects such as Medicine and Law faculties.

Degrees in 'elite' subjects usually lead to 'elite' professions in the occupational world. Subject specialisation is often translated into very different outcomes, depending on whether the subject-employment relationship is a specific or diffuse one. Most job-specific degrees give the respondents some advantage at recruitment but the importance of vocational relevance erodes over time and is less important in promotion.

The first job attainment (recruitment) of equally qualified people is also found to vary distinctly between industrial sectors and firm size. Moreover, when multivariate analysis was carried out for each sector, it was found that the emphasis employers place on formal qualifications varies substantially across sectors at recruitment, but more so for men than for women. The more bureaucratised administrative and professional sectors and large establishments are found to be more meritocratic (measured by the effect of formal qualifications) and the primary and services sectors are found to be the least meritocratic. However, these variations are not so notable in promotion.

Another important finding is that the effect of gender varies substantially between sectors. Equally qualified women are found to be significantly worse off than men in the most bureaucratised sectors such as private administration (which consists of banking, finance, accounting and insurance). This disadvantage persisted in promotion chances. It is therefore unwarranted to conclude that the administrative sectors are in general highly meritocratic. If we take the term 'meritocracy' to refer to the use of achieved rather than ascribed criteria for selection, then the continued use of the ascribed criterion of gender renders the administrative sector unmeritocratic.

This thesis concludes that meritocracy is not a process which operates uniformly throughout the different sectors of the British labour market. Since the effects of formal qualifications on promotion are similar in different sectors, education may not be adequate in measuring merit, thus this thesis also concludes that there is a need for a broader definition of meritocracy which may include hidden factors relating to 'on-the-job training' and other personal traits.

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Chapter One

Introduction

This thesis is about meritocracy in Britain. Unlike the traditional approach, this thesis is about disaggregated meritocracy. Using British data, it aims to explore the mechanism(s) responsible for class differences in subject choice in higher education; to unfold the complex relationship between subject choice and occupational attainment; and to compare the influence of formal qualifications on occupational outcomes in different industrial sectors. More specifically, it seeks to investigate the ways in which subject choice and industrial sectors affect labour market outcomes.

The main questions that I shall address are (1) is there equal access to different subject groups in higher education? (2) How far does subject choice in higher education influence occupational attainment? (3) Does the extent of meritocracy (measured by the direct influence of formal qualification on occupational attainment) vary between industrial sectors and organisations of different sizes?

This chapter consists of five parts. The first part is devoted to a formal discussion of the concept of meritocracy. In the second part, I shall review conventional approaches to the study of meritocracy. I then explain why this approach is not adequate in the understanding of the occupational attainment process and demonstrate that a disaggregated approach is therefore needed. In the third part, drawing on the theory of cultural capital, I explain why it is important to examine the relationship between social class and subject choice in higher education. Past studies of subject choice in association with class and gender are also reviewed. The fourth part addresses occupational attainment. A review is given of existing attempts to identify institutional and structural factors in explaining differential occupational

outcomes. Also in this part of the chapter the importance of disaggregating the study of meritocracy into different industrial sectors is explained. Finally, this chapter is concluded by an outline of each chapter to follow.

1. Defining Meritocracy

The concept of meritocracy is closely related to the theory of 'logic of industrialism'. Liberal theorists contended that the principle criteria for allocating individuals to different social positions had changed from ascriptive to achievement-oriented ones in most industrialised societies (Parsons, 1961; Kerr, 1972 and Bell, 1976). Increased demand for a qualified and skilled workforce prompted expansion in education and training, which became increasingly accessible to almost everyone in society. Achievement was commonly measured by educational attainment (an achieved rather than ascriptive characteristic) which was in turn understood as the objective form of 'merit'. The society therefore became more open as a result of meritocratic selection and hence greater social mobility was expected.

However, Marshall *et al.* (1997) argued that one cannot simply identify education with merit (Marshall *et al*, 1997:135). To place an equal sign between formal qualification and merit, as Marshall and Swift observed, is to assume that the unequal distribution of educational achievement by class reflects the distribution of merit. Equating merit with education also implies that any lack of association between individuals' credentials and their occupational destinations, and any direct link between origin and destination would be regarded as unmeritocratic. In doing so, Marshall and Swift argued, one 'ignores the possibility that people's class background may influence their possession of attributes that do not manifest themselves in educational achievements, but that quite properly (meritocratically) influence their

occupational outcomes'.[1] Thus, by defining education as the only indicator of merit one will mistakenly classify advantage transmitted between generations as unmeritocratic. In fact, the intergenerational transmission of advantages could be perfectly consistent with meritocratic equality of opportunity (Marshall and Swift, 1997).

As Marshall and Swift suggested, merit can be understood as people's 'real' or 'underlying' ability and motivation. Alternatively, it can also be seen as 'relevant competence'. They argued that using relevant competence rather than educational achievement to define merit is helpful because it 'points to an aspect of the intergenerational transmission of advantage that operates neither through the education system nor through discriminatory or particularistic practices on the part of employers' (Marshall and Swift, 1997). In addition, the possession of such competence should accurately reflect the natural ability and motivation of individuals. They concluded that society should aim at 'converting natural ability and motivation into valued skills, and rewarding people in ways that reflect their possession and exercise of such skills because that is the efficient way to maximise productivity and so to make as many resources as possible available to the least advantaged members of society' (Marshall and Swift, 1997).

Other critics such as Goldthorpe (1996) have gone even further. Goldthorpe argued that meritocracy is not a useful sociological concept because there is no universal standard of 'merit'. He argued that educational level served as no more than a 'screening device' in recruitment, and could not substitute for more specific 'in-house' or 'on-the-job' training which was probably more important in promotion. He

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[1] For example, other factors influencing successful performance in jobs could include a pleasant manner, being sensitive to the feelings of others, social skills, a willingness to be innovative at work and having a willingness to take risks (Marshall and Swift, 1997).

also pointed out that education could not capture other attributes that may also be regarded as merit such as discipline, responsibility, steadiness, loyalty and commitment. In his attempt to explain why the influence of social origin on destinations has remained constant over time, he argued that the definition of 'merit' in a market economy and pluralist society is highly subjective. To Goldthorpe, it is not possible for individuals to be rewarded simply according to talent and effort in a free society:

> Talent and effort will only bring reward if they result in something that has such market value; unwanted talent and fruitless effort will provide no return. Unequal rewards cannot therefore be regarded as expressing unequal merit, since they will reflect a whole range of influences on the structure of demand for goods and services that, as far as individuals are concerned, are simply happenstance. (Goldthorpe, 1996: 270)

For Goldthorpe, meritocracy is no more than a necessary myth that enables people to believe that their well-being depends upon their best efforts rather than the market. Conversely, meritocracy can be understood as 'a distribution in which people are rewarded in proportion to their ability to satisfy the preferences of others' (Marshall *et al.*, 1997: 181).[2]

However, neither Marshall and Swift nor Goldthorpe suggested any way in which 'relevant competencies' can be measured objectively. There is a danger that anything could be defined as a 'relevant' competence by an employer. Hence the notion of 'merit' becomes empty. In contrast, educational qualifications do have an 'objective' quality, being assessed by examining bodies who are independent of both the candidates and the employers. Moreover, while it does not make up the entirety of 'relevant competencies', it is surely one important aspect of relevant competency for

[2] Although they pointed out immediately that this defence of meritocracy is not unproblematic.

many skilled administrative and professional jobs.

As there seems to be no clear alternative, educational attainment remains the most acceptable and widely used measure to operationalise the concept of 'merit', although one should acknowledge the limitations, as Marshall *et al.* and Goldthorpe rightly pointed out, which occur with a such measure. To this end, Halsey (1997) argued that meritocracy may be seen as 'a regulative ideal, supported in law through equal-opportunities legislation, which creates the presumption that situationally specific judgements about merit can always be challenged in public' (Halsey, 1997:633). He further added that although such a presumption will not 'advance us further down the road toward a meritocracy; it may deter the excesses of a variety of forms of social exclusion in a pluralist age' (Halsey, 1997:633). Therefore, this points to the need for objective measures of merit.

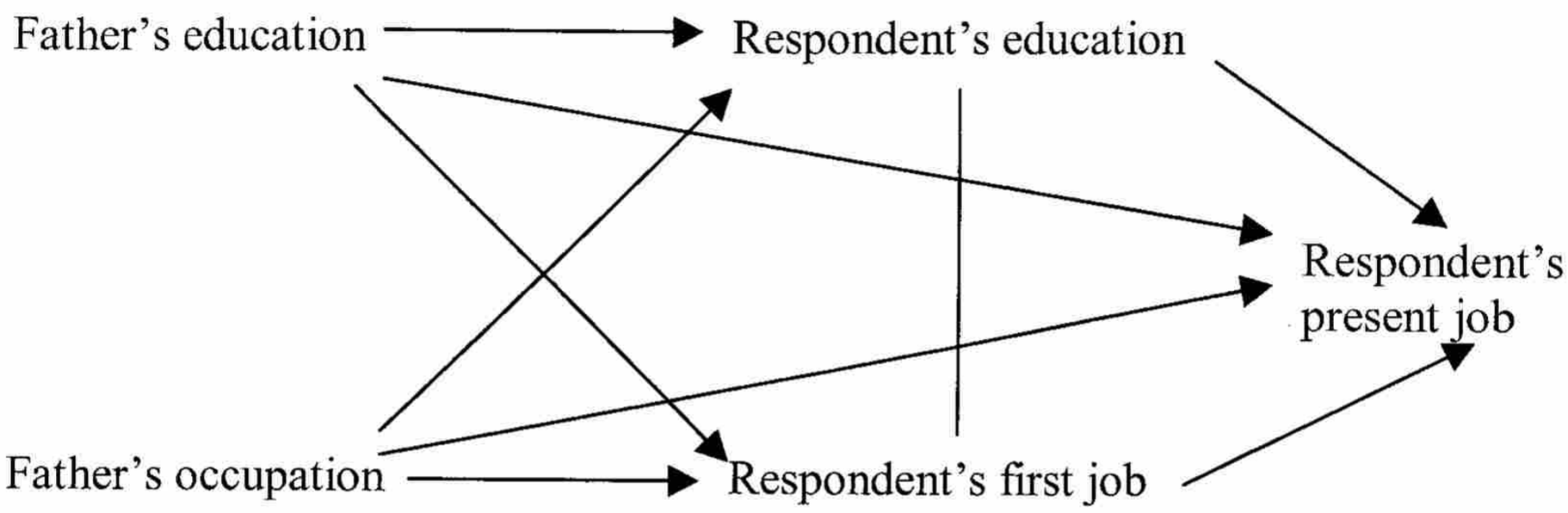
Hence, whilst the author is aware of the complexity of the concept of meritocracy, this thesis continues to use formal qualifications to measure 'merit', as was done in past studies on meritocracy including Marshall *et al.* (1997). It attempts - by using a disaggregated approach - to establish whether ability is converted into valued skills, via the exam and educational system, and whether individuals are rewarded in ways that reflect their possession and exercise of such skills. In other words, ability, exam results, the level as well as the subject of formal qualification will all be taken into account in the analysis of eventual occupational attainment.

2. Conventional Approaches to Meritocracy

Conventional approaches to occupational attainment have been concerned with the effect of ascribed characteristics (such as class, gender and ethnicity) on the level of educational attainment and in turn with the effect of level of attainment on eventual occupational success (Blau and Duncan, 1967; Featherman and Hauser, 1978; Halsey, Heath and Ridge, 1980; Heath and Clifford, 1990; Heath, Mills and Roberts, 1992). Educational credentials are usually regarded as crucial for an individual's life chances throughout the industrialised world, and class inequalities in educational outcomes are seen as inefficient. This has focused attention on the ways in which social positions are transmitted between generations. The primary concern is whether the bond between social class origin (usually measured by father's occupation) and education has been loosened and whether that between education and occupational attainment has been tightened.

It is believed that the basis of social selection has changed from ascription to achievement (Blau and Duncan, 1967). Blau and Duncan introduced the path analysis model to outline the process of stratification (see Figure 1.1). They believed that there was 'a fundamental trend towards expanding universalism which has profound implications for the stratification system' in most industrial societies. They continued, 'the achieved status of a man, what he has accomplished in terms of some objective criteria, becomes more important than his ascribed status, who he is in the sense of what family he comes from' (Blau and Duncan, 1967: 430). It is further assumed that employers' recruitment and promotion practices have changed.

Figure 1.1: Path Analysis Model of the process of attainment



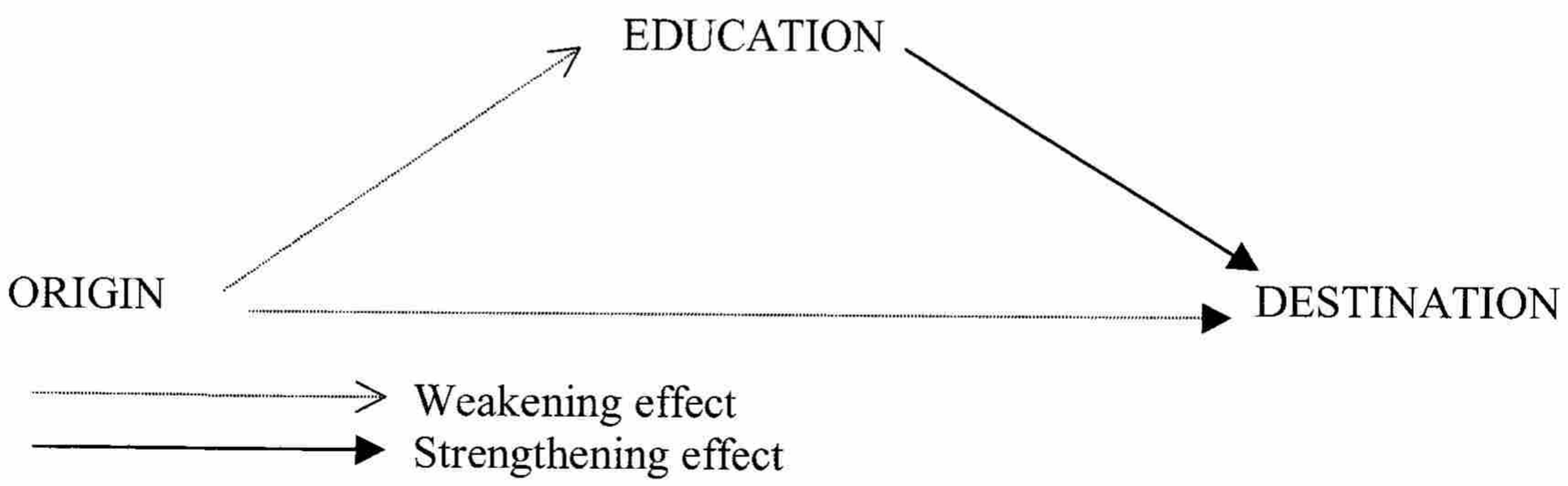
Source: Blau and Duncan (1967: 170, Fig. 5.1).

As argued by Heath, Mills and Roberts (1992), these American writers assumed that 'the modern, efficient business cannot afford to recruit inferior quality applicants who simply happen to wear the right school tie and belong to the right gender or ethnic group' (Heath, Mills and Roberts, 1992: 218). This model is widely replicated in past research to understand the attainment process in western industrialised societies, including Halsey (1977); Featherman and Hauser (1978); Heath (1981); Heath, Mills and Roberts (1992); Shavit and Blossfeld (1993); Jonsson (1992); Ganzeboom *et al.* (1992) and Jonsson and Mills (1993). Education, as an achieved status, is expected to increase in importance over time. As Bell (1972: 30) argued, 'The post-industrial society, in its logic, is a meritocracy. Differential status and differential income are based on technical skills and higher education, and few high places are open to those without such qualifications'. Competition for certain positions in the society is regarded as 'meritocratic selection'.

Most empirical research that has addressed the issue of meritocratic selection has indexed meritocracy by educational level attained. Education is usually measured by the time spent in education or by level of qualification obtained. The primary concern of most sociologists is whether in modern industrialised societies merit

becomes a more important determinant of individuals' access to higher levels of education and, in turn, to higher occupational attainment; whilst the influence of characteristics related to their families of origin will correspondingly decline. This has been labelled by Jonsson (1992) as the 'Increased Merit Selection' hypothesis. (See Figure 1.2)

Figure 1.2: Simplified Path Diagram of Occupational Attainment

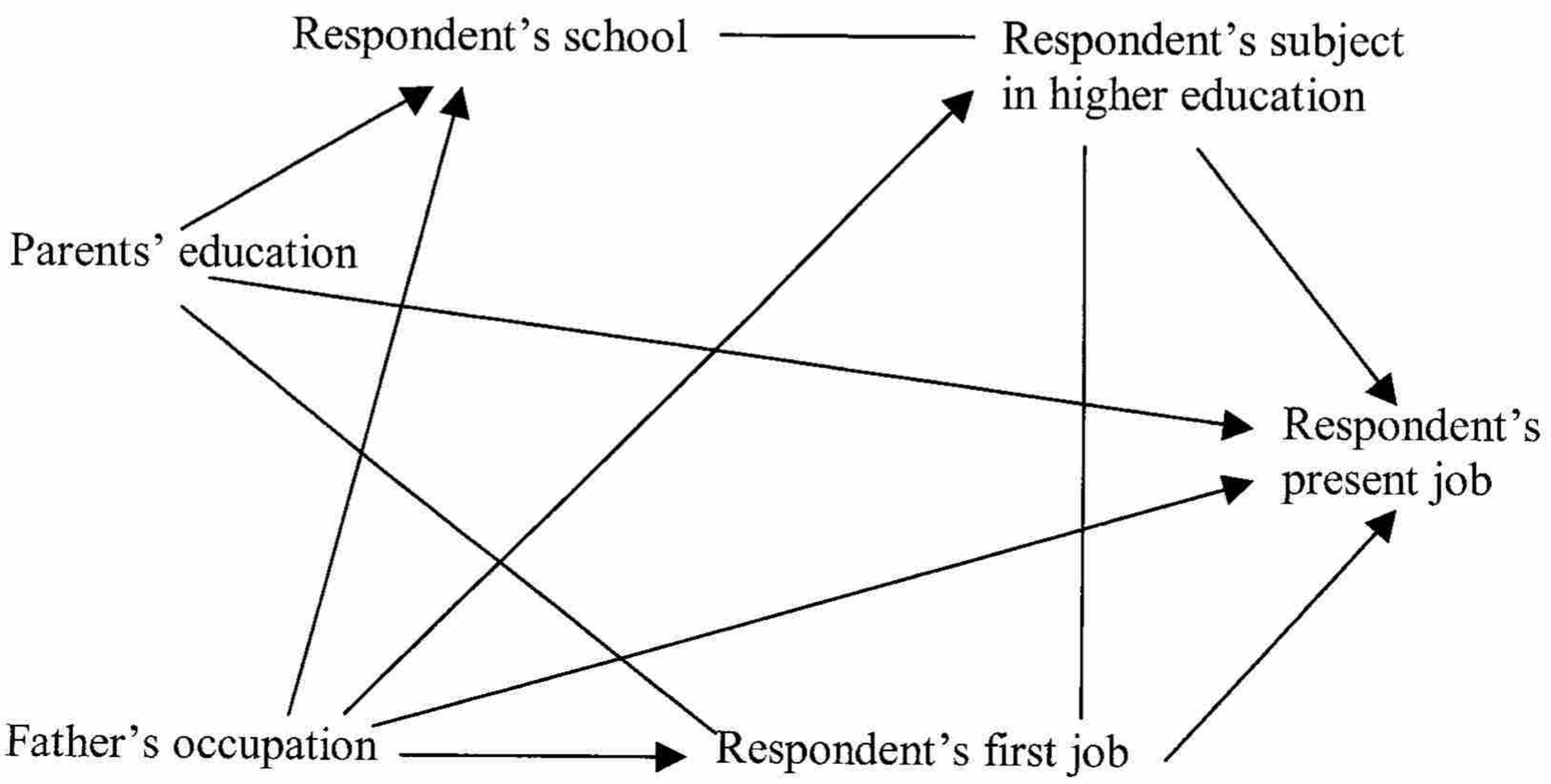


Although earlier studies in both the USA (Blau and Duncan, 1967; Featherman and Hauser, 1978) and England (Halsey, 1977) suggested that there was a strengthening effect of education on destination, more recent research has reached the conclusion that the influence of education on destination has actually weakened (Jonsson, 1992; Heath *et al.*, 1992; Ganzeboom *et al.*, 1992; Jonsson and Mills, 1993).

Sociologists thus concluded that occupational attainment is not wholly meritocratic as there continue to be direct influences of the ascribed characteristics on occupational outcomes, even after the 'meritocratic' factor of educational level has been taken into account. Moreover, we know that there are gender and class differences in educational attainment. These differences, as argued by Bourdieu (1977), are also found in subject choice in higher education. It may be that these subject choices in turn have implications for occupational outcomes. Hence, the so called 'direct' effects of class origin and gender on occupational attainment,

controlling for level of educational attainment, might disappear or be reduced once subject choice is taken into account. It is therefore important to examine the relationship between social origin, gender and subject choice. Thus, if we can find evidence that social class and school type affect subject choice in higher education, the occupational attainment model may look like this:

Figure 1.3: Modified Path Diagram of Occupational Attainment (1)



3. Social Class and Subject Choice

In Britain, traditional research in inequalities of education has focused largely on the *level* of education achieved by individuals from different social origins, gender or ethnicity (Halsey, Heath and Ridge, 1980; Heath, Mills and Roberts, 1991; Blackburn and Marsh, 1991; Mills and Jonsson, 1992; Cheng and Heath, 1993; Heath and McMahon, 1994). The more subtle class differences in subject choice, and the occupational outcomes of these choices, have received scant attention. At primary and secondary levels the relationship between social class and subject choice is often not very clear, because pupils are normally required to study a wide range of subjects. This relationship may become more obvious at higher levels of education when

students face the choice of subject specialisation and even the choice of a possible career.

As discussed above, past research was primarily concerned with the extent to which education mediates the effects of origin on occupational attainment. However this view is inadequate on at least two counts. First, it does not deal with the effect of social origin on the unequal access to different subject groups in higher education which I shall argue, constitutes a form of educational inequality. Second, different degree subjects may lead to highly differentiated occupational outcomes according to the degree of 'elitism' of certain subjects. Examples of 'elite' subjects are Medicine and Law, which usually lead to prestigious professions. Through the examination of the relationship between social origins, higher education, subject choice and occupational attainment, this thesis, it is hoped, will offer a more complete understanding of the attainment process.

Past research has established the salient and persistent effect of social class backgrounds on educational attainment. There is, however, limited effort in most empirical research since the 1970s to explain *how* social origins cause inequalities in education (Bourdieu and Passeron, 1964, 1977; Boudon, 1974; Goldthorpe, 1995). There are even fewer attempts to identify and explain differential access to various disciplines or faculties in higher education.

But are there really any social class differences in subject choice in higher education? If so, what are the mechanisms that generate these differences? There is a relatively limited theoretical exposition on class inequalities in higher education. In explaining inequalities in higher education, Bourdieu and Passeron suggested that inequalities consist of two dimensions - the *level* and the *discipline*. They argued that entry to higher education is not a straightforward process and that there is no open

access to all faculties. They argued that although the working class is gaining increasing access to higher education, their choice of subjects is still very limited. In their observation of the unequal distribution of students between different faculties, Bourdieu and Passeron gave an elaborate account of the inequalities of subject choice in higher education:

> If social origin or sex acted as a differential sieve only for higher education, and if, on entering university, unequally selected contingents had equal chances of entering the different courses - in short, if the distribution of students among the various faculties depended only on individual 'vocations' and 'tastes' (considered as natural propensities unaffected by social determinism) - then for a hundred students of a given origin, we should expect to find a distribution of conditional probabilities which, in each social category, purely and simply reflected the different disciplines' share of the total number of students (Bourdieu and Passeron, 1977:228).

In other words, if five per cent of all students had chosen Medicine and if there was no class difference, the proportion of middle class and working class students choosing this subject should be the same. However, in 1961-62, working class students in France mainly chose areas within the Arts or Science whereas a higher proportion of upper class students took up Law or Medicine. Compared with the random distribution which would result from the 'free play of natural faculties', the actual distribution exhibits a systematic distortion due, by and large, to the fact that students of less well-to-do origin gravitated towards the Arts and Science Faculties and students from the wealthier classes towards the Faculties of Law and Medicine. Bourdieu and Passeron saw this as a 'social specialisation' of the faculties and this phenomenon tended to become more pronounced between 1961-62 and 1965-66. To explain this, they argued that the lower a student's social origin, the more his/her access to higher education had to be paid for by a 'restriction on choice', even to the extent of the more or less compulsory 'relegation' of the least favoured categories into Arts or Science. This distribution remained virtually unchanged in 1966, with the

different social categories ranged in the same hierarchy with respect to the 'choice' of Arts or Science subjects (1977:229).

Bourdieu and Passeron also identified significant gender difference in subject choice. They found that whatever the social origin, Arts subjects were always the most likely ones for female students which trained them for a career in teaching, and Science subjects were always the most likely ones for males (Bourdieu and Passeron, 1979:6). For female students, the more disadvantaged their social background, the more limited their choice. They maintained that students from underprivileged backgrounds 'must accept the obligatory choice between Arts and Science as the price of their entry into a university which, for them, has two doors instead of five' (Bourdieu and Passeron, 1979:7).

The idea of 'social specialisation' of the faculties is closely related to secondary education. Access to secondary education was extended to new fractions of the working classes only at the cost of relegation into establishments or sections (e.g. the 'modern' stream) objectively situated at the bottom of the academic hierarchy, a relegation which channels them almost inevitably into the Science Faculties.[3] And so it is not surprising that one finds an increased conditional probability for working class students enrolling in Science, whereas upper class students more frequently take up Law or Medicine. In other words, there may be a link between secondary education and certain subject areas in higher education.

In short, Bourdieu and Passeron concluded that the slight improvement in working class children's chances of entering university has in a sense been offset by a strengthening of the mechanism tending to relegate the survivors into certain faculties.

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[3] New institutions (modern universities and Polytechnics) were set up in order to expand higher education in Science and Technology and also to broaden the social base of recruitment into occupations related to these subjects.

They also argued that in order to grasp the social significance of the different social categories' share in the faculties or disciplines, we have to take into account the position that each faculty or discipline occupies at a given time within the system of faculties or disciplines. Failing to do this, we are still left with an incomplete understanding of inequalities in education.

Britain makes an interesting case on which to apply the concept of 'social specialization' of faculties and its link with secondary education because of the existence of the private sector in British education outside the state system. Although these fee-paying and often highly exclusive schools only educate a minority of the population, they always have a social importance in the education system because of their strong links with university education (Halsey, Heath and Ridge, 1980; Walford, 1984). Thus, the British experience allows us to establish whether pupils from different types of school are channelled into different subject areas in higher education. The question of whether students who attended privileged secondary schools are more likely to enter elite subjects will be dealt with in Chapter Three.

Past studies on Class Difference in Subject Choice

In Britain, there have been some attempts to explore the relationship between social class and subject choice in higher education.[4] In a study of 1960s graduates, it was discovered that students and their parents exhibited differential use of higher education as a means of achieving high status. Such differences were shown in subjects read at university by men and women and by various social origins (Kelsall *et al.*, 1970). It was suggested that Science, and especially Technology, tended to appeal more than Arts and Social Science to students of working class origin. These

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[4] the study of subject choice in higher education appears to attract more attention among economists who are mainly interested in manpower and resources planning (Dolton and Makepeace, 1992).

findings are consistent with previous research (Payne and Bird, 1969; Sandford, 1965; Musgrove, 1967), which show that Engineering courses in institutions such as polytechnics and universities of Technology were apparently more heavily subscribed than Pure Science courses, by young people of manual working class origin. Meanwhile, both Engineering and Science courses attracted greater proportions of manual working class students than did either Arts or Social Science courses.

Kelsall *et al.* suggested that students from working class homes seemed to find higher education in 'practical' and vocationally oriented subjects such as Engineering, more culturally acceptable than a 'liberal education', which after all, they argued, can be, and often was, seen as a luxury and a form of conspicuous consumption. They contended that both working class parents and students tended to prefer Technology and, by association, Science courses, not only because these were seen to be related to future work, but also because they were related to the experience of many manual working class fathers, especially those with industrial skills. This scenario was more strongly displayed among men. However, they argued that it could also be extended in more general terms to women from working class homes, for whom Arts rather than Technology courses were popular, since Arts subjects were seen to be vocational preparation for teaching,[5] a profession which was known to attract the upwardly mobile.

National evidence presented to the Robbins Committee regarding the social origins of university students indicated that, relative to their proportion in the student population as a whole, men from working class homes were over-represented in Science and Technology and that women of manual origin were slightly over-

[5] A similar observation can be found in Jackson and Marsden (1966). In their study of the educational and occupational attainment of working class children, they find that over two-thirds of them, (female students in particular) became teachers, whatever their subject of study.

represented in Arts and Science faculties (Committee on Higher Education, 1963). The findings of Kelsall *et al.* are broadly in line with these figures, particularly regarding the tendency of working class men to read Pure Science and of working class women to read Arts. Social Sciences were most popular among middle class graduates of both sexes (1972:54).

One of the major arguments put forward by Kelsall *et al.* is that the level of social 'exclusiveness' of different kinds of universities, as well as subjects read, needs to be taken into consideration. They argued that there are essential differences between the Sciences and the humanities as disciplines. Humanities required the ability to control and manipulate words and the concepts and better writing skills. In contrast, for scientists, articulateness in these terms was perhaps not essential, for any abstract concepts that s/he used are unlikely to require verbal expression. They maintained that working class students in Arts and Social Science faculties suffered some residual disadvantages compared with their middle class contemporaries in terms of proficiency in dealing with abstract ideas and their verbal expression. The scientist or the technologist from a working class home, however, suffered no such disadvantage, since excellence in his subject did not necessarily require verbal and conceptual proficiency of this kind[6] (Kelsall *et al.*: 55-56).

It was suggested elsewhere that any difference between the working class students and middle class students in the use of higher education as a means of achieving high status may well be the outcome of differences in motives for going to university (Hyman, 1966). Hyman suggested that working class people valued security and economic gain more than middle class people did. Kelsall *et al.*

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[6] Such an understanding can be interpreted as an extension of Bernstein's idea of the elaborated and restricted codes of students from different social class backgrounds. For details see Bernstein (1964).

supported this view but argued that this was not necessarily to say that the middle class did not value economic gain and security at all. Perhaps the middle class was in a position to take these things for granted in their lives and to divert their aspirations to more altruistic objectives such as intellectual development. Class-related values, Kelsall *et al.* argued, were in general fairly realistic in terms of the situations in which members of the different social groups found themselves, and therefore, reflected the extent that the British working class was on average less occupationally and financially secure than the middle class.[7]

On the basis of this, Kelsall *et al.* suggested that working class students were more likely to stress instrumental motives for going to university than their peers from middle class backgrounds who might be more inclined to take material desiderata for granted and to stress expressive motives (Kelsall *et al.,* 1972:56). Despite the fact that not all the graduates could be confidently classified as 'instrumental' or 'expressive', they found that working class graduates were somewhat more likely to give reasons of an instrumental nature for their desire to go to university, while middle class graduates were more likely to stress expressive considerations.[8]

Students enter higher education with a wide range of goals in mind. It is argued that only some of these goals relate higher education to career success. In a more recent study of graduates' careers, Brennan *et al.* (1993) also found that many students were not vocationally orientated in their decisions to enter higher education

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[7] According to the dual labour market theory, manual work belongs to the external labour market and manual workers are more vulnerable and easily disposable. They are more likely to be subject to redundancies due to market fluctuations than are non-manual workers. In contrast, most non-manual work belongs to the internal labour market and is characterised by a high level of job security. These jobs are usually salaried and come with good fringe benefits such as better holiday and special pension and / or superannuation schemes (Doeringer and Piore, 1971).

[8] Students may be more instrumental now than they were in the 1960s and 1970s. Very little research has been done since Kelsall to look at the relationship between class backgrounds and students' orientation, particularly in subject choice in higher education. It is likely that sociologists do not view the chance of accessing different subject groups as an inequality issue. Instead they see it as a result of different aspirations and choices.

and in their choices of particular higher education courses. Many had far from a purely instrumental and extrinsic approach to higher education.[9] In contrast to the observations of Kelsall *et al.,* they found that students from less favoured social and educational backgrounds were less likely to have well defined career orientations and chose courses with less direct links with the labour market. With respect to the factors that affect subject choice in higher education, Brennan and his colleagues maintained that the choice of higher education institution and the course to follow is the outcome of a long process of decision making, reflecting different occupational orientations. These orientations are also determined by a combination of personal interest and socio-economic circumstances, along with the power of accumulated credentials to limit or extend educational opportunities. They recognised that parental background, family pressure and economic status all influence decisions to enter higher education as such, as well as the choice of which discipline or subject area to study (Brennan *et al.,* 1993: 33).

A more recent study also emphasised family influence on subject and occupational choice (Devine, 1994). In a study of women engineers Devine (1994) found that family support was crucial, with many of these women having fathers who were engineers. She argued for the important role of family and school in providing young people with information to assist their career choices.

Past studies of social class, students' aspirations and subject choice largely remain at the bivariate level. No attempt has been made to deal with the net effects of each of the factors including class origins, school type, gender and possibly past academic performance on occupational attainment. This thesis aims to fill the gap in

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[9] They attribute the cause of this to the change in the social profile of students. They argue that there has been an increase of mature students in higher education in recent years (especially mature female students) who tend to be, they believe, less career oriented with regards to higher education than younger (especially younger male) students.

existing research by providing a more systematic analysis, using formal statistical procedures to test the strength of the relationship between social origin, school, gender and subject choice.

Gender and Subject Choice

It is widely documented that boys and girls have different aspirations in education and this in turn affects their subject choices at school (Oakley, 1972; 1981; Deem, 1978; Grafton et al., 1987; Crompton and Sanderson, 1990). In public examination[10] and further education, subjects are widely and clearly segregated along gender lines: girls opting for nursing and secretarial courses, and boys gaining technical qualifications (Deem, 1978).[11] It is believed that early specialization may also be a factor affecting access to higher education or may block off options later on in the academic career (Deem, 1978; Brennan *et al.,* 1993). For example, those who gave up Science or numeric based subjects such as Mathematics at an early stage would find it difficult to enter some faculties (Engineering and Technology, Architecture, or Medicine) at university. Despite recent trends suggesting that the gender gap in education has narrowed[12] and increasing number of female students gain access to higher education, as Crompton and Sanderson observed (1990), important differences by subject still persist with women predominating in Arts

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[10] More recently, statistics show that at GCSE level girls are still more likely to score higher grades in English, foreign languages, and History while boys perform better in Chemistry, Physics and craft, design and technology (CDT) (Social Trends, 1996). These figures indicate that the traditional gender differences still persist in subject choice. This may have consequences for students in choosing their 'final' specialisations in further or higher education.

[11] Many courses in polytechnics and colleges of further education are largely biased towards Science and Technology. Similarly, in traditional universities, male students are predominantly specializing in technical and Science subjects and women in Humanities (Annual Abstract of Statistics, 1994). Moreover, Science and Technology faculties get much more resources and funding than Arts faculties. This was seen to have an adverse effect on the number of places available in Arts and Humanities which means that girls who wish to enter higher education may be "handicapped" (Deem, 1978).

[12] As summarised by Crompton and Sanderson (1987), girls' leaving attainments have improved considerably as compared to boys. Fewer girls than boys leave school with no qualifications at all.

subjects and men in Sciences[13].

In short, despite better performance of girls in public examinations[14] and wider access to higher education for women, they are still over-represented in certain disciplines, namely Education and Humanities. Previous studies on gender and subject choice undeniably contributed to a better understanding of the role of family and school in the socialisation process. However, of the few studies that looked at the relationship between subject choice and gender, no systematic account was given to analyse the implications of these choices – that is, how do these choices affect men and women's occupational attainment.[15]

Even if the chance of entering universities for women has risen considerably, do they have equal access to different disciplines as men? Access to different subject groups at university is not normally viewed as a form of inequality. It is more often seen as a choice influenced by early socialisation (Douglas *et al.,* 1968; Hudson, 1972). However, since subject choice may lead to different occupational outcomes, differential access to certain subject groups or faculties becomes an 'inequality' issue that may affect subsequent occupational attainment. We know that women are usually less successful in occupational attainment (Heath, Mills and Roberts, 1992; Kerckhoff, 1993; Heath and Cheung, 1997). Can this disadvantage be explained by their subject choice in higher education?

Hence, the study of inequalities in education should not only address the *level* of qualifications obtained; access to different subject groups should also be taken into account. So the next question should concern the implication of these gender-

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[13] Crompton and Sanderson argued that these differences may lead to significant consequences given the differential impact of cuts by subject in higher education.
[14] Recent statistics show that women have caught up with men in higher educational attainment, and in the case of GCSE examinations, girls even out-performed boys in mathematics (Social Trend, 1996).
[15] In their attempts to explore gendered jobs, Crompton and Sanderson (1990) looked at women pharmacists and accountants.

segregated choices in higher education. What are the occupational consequences in the labour market?

4. Occupational outcomes of Subject Choice

It has been argued that choosing a subject area at university level could also be a choice which leads towards a particular kind of work (Lyon and Murray, 1993). To what extent does subject choice restrict or widen graduates' job opportunities?

The link between degree education and employment is by no means direct. With the possible exception of teaching, it can be argued that Arts students have acquired few skills specific to any career. Hence some writers suggested that the link between university education and employment depends largely on the assumption that a general intellectual and cultural heritage, which it is believed is transmitted in a degree course, is in some ways applicable to most occupations. (Cotgrove, 1962). However, Kelsall *et al.* found a link between subject and career choice even during the early stages of the university life of their respondents. For example, when their respondents were asked about their occupational plan on entry to university, most Arts students showed a particular preference for school teaching; social scientists in contrast were more likely to opt for some other form of professional employment. On the other hand, technologists were spread more evenly over the range of careers, though they showed a special preference for non-university research, design, development or production. The subject of degree, Kelsall *et al.* argued, however, was not the only nor the most significant factor associated with career choice. Instead, both the types of school and university attended were equally important, though these in their turn were associated with the underlying influence of family background. Those who had been educated in the private sector aspired particularly to administrative, professional types of work, while the state-educated placed an

emphasis on teaching or research. However, Kelsall *et al.* only discussed the realization of these occupational aspirations in relation to social origins: no reference was made to subject choice.

Using Early Destination Statistics, Tarsh (1989) examined the employment pattern of graduates and identified persistent variations in employment patterns related to degree subjects as well as in relation to gender. Research continued to show that there is a strong relationship between subject areas and employment. It was suggested that graduates enter different levels of the labour market with different skills and knowledge:

> The labour market for graduates is structured into different levels and sectors of jobs, each more or less secure or well-paid, more or less open to graduates without particular sets of qualifications. Some parts of the labour market recruit virtually any types of graduates, recruitment to other parts is more or less regulated by formal and specialised qualifications and requirements (Brennan *et al.,* 1993:25).

Graduates with degrees in business and management studies, economics and accountancy were more likely than arts graduates to be recruited into professional jobs by the financial sector (Brennan *et al.,* 1993). Graduates with general non-numeric education such as Creative Arts and Humanities, Brennan *et al.* argued, will be filtered down to routine administrative and secretarial work.

In terms of differential rewards, a recent report published by the Department of Employment has also identified important difference in the type of work and disparities in earnings between subject areas of graduate employment (Dale and Egerton, 1997). They reported that not only did vocational academic degrees[16] lead to higher professional qualifications and to higher social standing[17], but that they also

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[16] These include medicine and dentistry, architecture, accounting and finance, law and veterinary studies.

[17] Both male and female graduates with vocational academic degrees have higher median Cambridge Occupational scores than other graduates.

generated higher weekly and hourly earnings. As far as gender difference is concerned, Dale and Egerton found that women tended to follow a more conservative and vocationally based career strategy where teaching played a particularly important role. In contrast, men were more likely to use existing qualifications or gain new ones to follow a career in management or finance and accounting.

Considerable light on subject choice in degree education and its occupational outcomes has been shed by Kelsall and Brennan and their research colleagues' work. None the less, their research is subjected to limits since only bivariate statistics such as cross-tabulations were presented. Without modelling the data, no hypothesis testing can be conducted. Hence the link between subject choice and occupational outcomes is often asserted rather than empirically investigated. Whilst the main focus of the Dale and Egerton study is on the careers of highly educated women and family formation, this thesis attempts to test hypotheses concerning the relationship between social origins, gender, school type, subject specialization and occupational outcomes for both men and women in the NCDS cohort. The questions are therefore: (1) whether social origins have a significant impact on subject specialization in higher education. (2) Whether there is a strong link between private selective schooling and 'elite' subjects in university. (3) Whether subject specialization leads to differential occupational outcomes and whether these outcomes differ between men and women.

Sectoral Difference – A disaggregated view of occupational attainment

As Blossfeld and Shavit (1993) observed, there has been an increase in bureaucratisation and rationalisation in the twentieth century. This was reflected in the increasing proportions of the work force employed in larger and more formalised organisations and firms (Blau and Duncan, 1967).

The formal competitive examination system has provided employers with a

more objective selective criterion, based on the merits or 'achieved' characteristics of the individual rather than 'ascribed' characteristics such as class, gender or even ethnicity. It has been suggested that the decline in traditional small-scale family farms and family businesses and the expansion of large-scale bureaucracies have led to a decrease in the number of inheritable positions (Lipset and Bendix, 1959). This implies an association between small-scale family businesses and the direct inheritance of social positions, and a close link between large-scale bureaucracies and universalistic selection principles. Since the degree of bureaucratisation is different, it is possible that the effect of ascription on occupational attainment will vary in different industrial sectors in the economy. Also as Heath observes, in addition to the increase in large-scale bureaucracies in industrial societies, the principles of selection and promotion operating within bureaucracies have changed over time:

> The nepotism and corruption of the civil service in Pepys's day, the practice of purchasing commissions in the armed forces have been swept away and replaced by a system of formal examinations, selection board and the like (Heath, 1981:79).

Large bureaucracies are characterised by a formal set of rules governing operations and activities which co-ordinate behaviour in a predictable, uniform and impersonal fashion. Recruitment and promotion in bureaucracies is based on universalistic criteria (Weber, 1968; Kerr, 1960; Blau and Duncan, 1972). Since the majority of public organisations in the administrative and professional sectors are large bureaucracies, we expect the recruitment procedures in these sectors to be institutionalised with formal mechanisms such as standardised application forms, health checks and so on. In contrast, qualifications may be less important in sectors such as hotel and catering, primary and other private service sectors where other forms of human capital may be more important such as accumulated work experience

or personal traits that are not necessarily acquired from schools. In his discussion on 'expanding universalism', Heath has also suggested, if rather indirectly, that some sectors of the economy may appear to be more 'meritocratic' than others:

> ...certain elite groups, such as the higher ranks of the civil service, have slowly become more open under the pressure of competitive examinations and expanding educational opportunities, although other areas like the City have remained impervious to change (Heath, 1981: 168).

In other words, although large bureaucracies and public organisations can be associated with formal impersonal recruitment procedures, the general expectation that a more developed 'meritocracy' exists in large organisations may not be true in the private sector such as banking, insurance and finance, and other private organisations.

It may seem evident that no generalisation can be made about the degree of meritocracy in all sectors in the economy. However, most research on meritocracy has focused largely on the extent to which qualifications affect occupational attainment or class destinations (Lipset and Bendix, 1959; Treiman and Terrell, 1981; Heath, 1981, Heath, Mills and Roberts, 1991; Ganzeboom, 1991). On the one hand, although it is widely acknowledged that employment relations, wages, promotion opportunities and allocation processes vary between different sections of the labour market, this is rarely reflected in empirical research that examines the occupational attainment process. It seems that implicit assumptions are often made about a uniform relationship between qualifications and occupations - usually in a linear way, i.e. more education or higher qualifications normally leads to better occupations (Blau and Duncan, 1967; Halsey, Heath and Ridge, 1980; Ganzeboom, 1990; Heath, Mills and Roberts, 1992).

Critics such as Beck, Horan and Tolbert have pointed out that most studies of

the attainment process have neglected institutional and structural factors such as firm size and industrial sector in the economy where the attainment process actually takes place. (Horan, 1978; Beck, Horan and Tolbert, 1978; Baron and Bielby, 1980). They argued that the organisation of the economy into different industrial sectors provides different employment opportunities and occupational rewards for individuals with the same level of qualifications (Beck, Horan and Tolbert, 1978; Kerckhoff, 1993). Entry requirements for a job may vary from one sector to the next. For example, for educational and civil service jobs, formal qualifications may be a necessity while in hotel and catering, but in some areas of the private service sector, it may not be an essential requirement for getting a job. This suggests that the selection process in different industrial sectors may be rather different. Consequently, two individuals with the same level of qualification (and perhaps even the same subject specialisation) may end up having entirely different occupational outcomes in two different industrial sectors. Increasing attention has been drawn to differential labour market outcomes between industrial sectors. However, what this kind of approach has not been able to investigate is the *differential returns to education* (measured by the direct effects of formal qualifications on occupational attainment) between industrial sectors within this process. To achieve this, separate analysis for each sector is needed to compare the effects of both ascribed and achieved characteristics. In doing so, we can address the hypothesis of the extent to which the level of meritocracy differs between industrial sectors in the economy.

In sum, past research has shown that different industrial sectors give access to varying levels of occupation. If there are subject, gender or class differences in the sector entered, this may help to explain how subject choice (or gender or class origins) influences eventual occupational attainment. Moreover, sectors may differ

not only in their levels of occupation that they give access to but also in their levels of bureaucratisation. This may therefore affect the rate of return to education. In other words, the extent of meritocracy may be lower in less bureaucratised sectors.

A Disaggregated Approach

As I noted earlier, more research in Britain focuses mainly on the persistence of class inequality on educational attainment and on subsequent occupational attainment. The effect of cultural resources[18] in the family on educational outcomes has been largely dismissed by sociologists. Factors (e.g. class and gender) which affect the attainment of the *level* of qualification may also affect the *subject* of qualification obtained. This thesis deals with *both* the factors affecting the level of educational attainment and the subject studied at higher education level. The occupational consequences of subject choice will also be fully investigated.

On occupational attainment, research on income and earnings has successfully identified considerable variations between different sectors of the economy (Kaufman and Hodson, 1981; Zucker and Rosenstein, 1981). Despite this, few studies have brought the dimension of industrial sector into the study of the attainment process with the exception of Erikson and Jonsson (1996). Moreover, although structural factors including sector and firm size have been identified to explain differential levels of occupational attainment (Beck, Horan, Tolbert, 1978; Kerckhoff, 1993), the different effects of formal qualifications on job attainment in each industrial sector have rarely been dealt with.

This study aims to add new knowledge to existing research in the sociology of

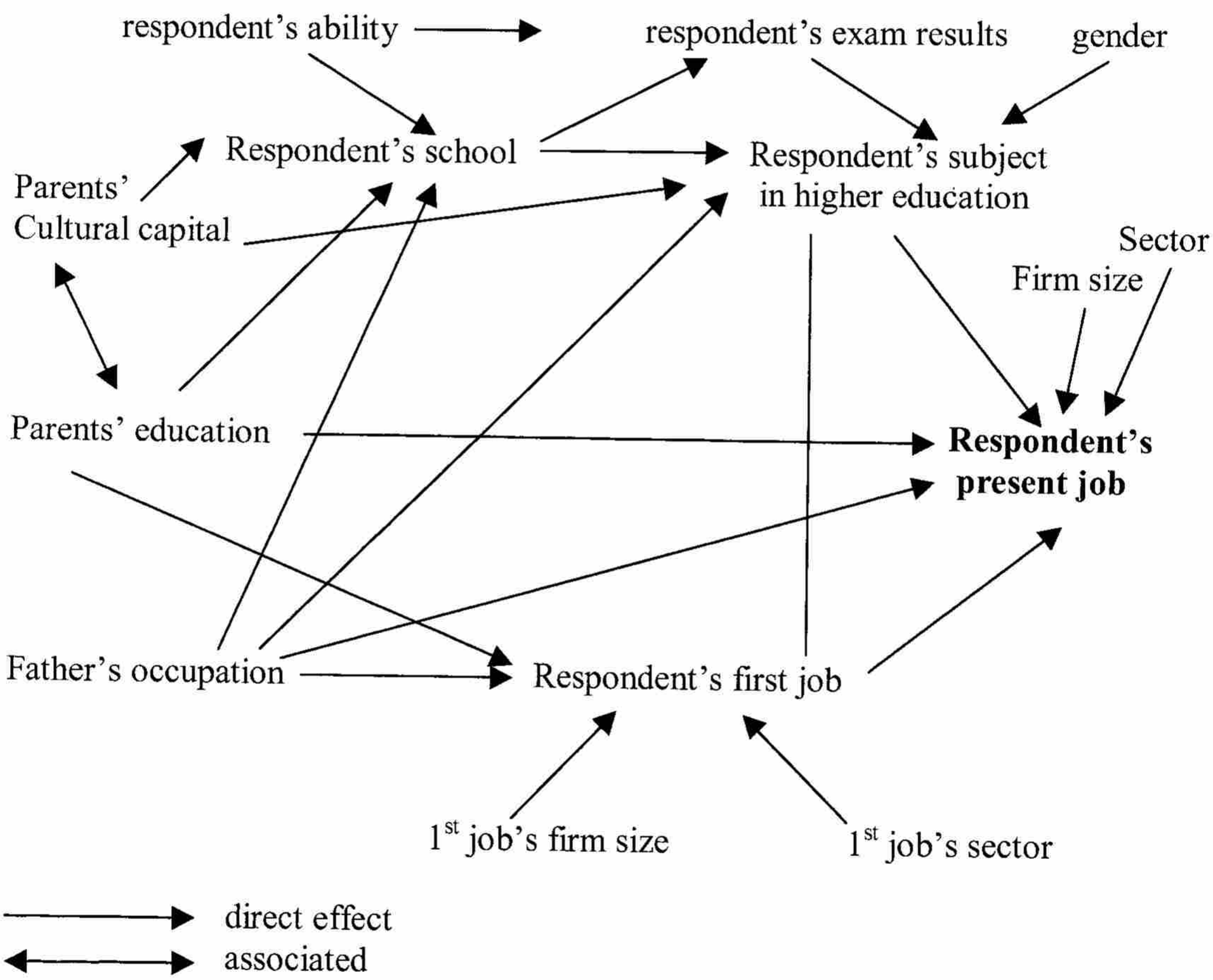
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[18] Increasing attention has been drawn to the importance of cultural resources on educational outcomes. But most studies are confined to America, Europe and Australia. In Britain, only Delamont (1989) and Egerton (1997) have argued for the positive influence of cultural capital on children's academic achievement and occupational (Egerton, 1997) attainment.

education and more specifically, in the study of the attainment process by offering a disaggregated approach in examining the *horizontal* difference in both educational attainment (subject choice) and occupational attainment (sectoral difference).

Therefore, if social, cultural origins and school type affect subject choice in higher education, if women's lower occupational attainment is due to subject choices made in higher education, and if structural factors (firm size and industrial sector) have a significant impact on job attainment, the attainment model will look like this:

Figure 1.4: Modified Path Diagram of Occupational Attainment (2)



5. Organisation of the thesis

Chapter 1: Introduction

In this introductory Chapter, I have discussed the need for a disaggregated approach in order to study educational and occupational attainment. Theoretical issues related to subject choice in higher education and sectoral differences in occupational attainment are also reviewed.

Chapter 2: Data and Methodology

In this chapter, I first describe the source of data used in this thesis. In brief, data are drawn from the National Child Development Study, which consists of five main sweeps. I explain the reasons why this is the most suitable data set for this study. Moreover, the origin and the nature of this data set are also discussed in detail. Secondly, the methods of analysis used for this study including bivariate analysis, logistic regression and linear regression analysis are outlined.

Chapter 3: Social and Cultural Origins, Higher Education and Subject Choice

The analysis in Chapter Three is divided into three parts. First, important theoretical concepts related to higher educational attainment and subject specializations are recapitulated. Second, factors leading to success in higher education are examined. The relationship between cultural resources, educational level and social class is discussed in the attempt to test Bourdieu's theory of cultural reproduction. This is of some importance as Bourdieu's theory of social class and subject choice is closely related to his theory of cultural capital.

The third part explores the factors determining an individual's subject choice in higher education. The analysis will focus on the role of social origins, cultural capital, gender and public examination results. It aims to show that the strong relationship

between social class and subject choice is not a contingent one.

Chapter 4: Subject Choice and First Job Attainment of the NCDS graduates

Chapter Four examines the occupational outcomes of the NCDS graduates, at the age of 23 in relation to their degree subjects. The analysis in this chapter focuses primarily on graduates' economic activity and their first job attainment while some of the tables will also cover the first job attainment of all cohort members to serve as a comparison. Attention is drawn particularly to the differential occupational outcomes not only for male and female graduates, but also by graduates with different degree subjects.

Chapter 5: Industrial Sector and Occupational Recruitment

In Chapter Five, the effects of structural factors such as firm size and industrial sector are explored. As I shall show in this chapter, industrial sectors and organisations of different sizes give access to varying levels of occupation even controlling for a wide range of background and achieved characteristics.

Chapter 6: Sectoral Difference in Meritocracy - Recruitment

In this chapter, I ask the questions 'to what extent are industrial sectors different in terms of their meritocratic practices?' and 'Are large and small firms equally meritocratic in their recruitment of new staff?' The main hypothesis is that a more developed meritocracy will be found in more bureaucratised sectors and large organisations. The differential effects of qualification as a mediating factor between social origins and status attainment in different sectors and in firms of different sizes will be closely examined. Separate regression models are used for each sector. This allows us to compare the different returns to education between sectors and to establish which sectors are the most 'meritocratic' in their recruitment practices.

Chapter 7: Promotion – Jobs in 1991

Chapter Seven examines respondents' job attainment in 1991, at the age of 33. By this age, most of the NCDS cohort members had experienced considerable changes, ranging from marriage and to family formation, to the acquisition of higher or further qualifications and promotion. The focus of this chapter is on promotion. The influences of the changes in qualifications, industrial sectors on respondents' jobs in 1991 will be investigated. For graduates, the effect of the change of subject specialization will also be explored.

Chapter 8: Sectoral Difference in Meritocracy - Promotion

Chapter Eight discusses the effects of qualifications (both initial qualifications and new qualifications gained since their first job) on promotion in different industrial sectors in 1991. It aims to answer the question of whether more developed meritocratic practices in promotion will be found in the more bureaucratised sectors and large organisations. As in Chapter Six, separate regression models are run to compare the effects of both ascribed and achieved characteristics on job promotion in different sectors.

Chapter 9: Summary and Conclusion

In this concluding chapter, major findings of this thesis on the influence of cultural capital on educational attainment, social class and subject choice, the occupational outcomes of subject choice, the effects of structural factors on occupational attainment, and sectoral difference in meritocratic practice are summarized. Chapter Nine also concludes this thesis and examines the general implications of this study for the meritocracy thesis. Attempts are made to explain the more complex relationship between origins, education and destinations and the

process of occupational attainment. Above all, it also reassesses the need for disaggregation in studying educational and occupational attainment.

Chapter Two

Data and Methodology

The data of this study come from the National Child Development Study (NCDS). This chapter is divided into three parts. First, I shall explain why longitudinal data are more suitable for studies of this kind. Second, the various sweeps of NCDS and the nature of the data that are used for the analysis in this study are described. This will also include a discussion of the strengths and limitations of the NCDS. Finally, the method of analysis used in this study will be discussed.

Why Longitudinal Study?

There are broadly two kinds of data that could be used for the analysis of educational and occupational attainment, namely, cross-sectional and longitudinal data. Most data sets available for public access are cross-sectional in nature, such as the General Household Survey, the Labour Force Survey, the Family Expenditure Survey and many more. Cross-sectional data can also include responses to retrospective questions. The Social Change and Economic Life Initiative is an example. The NCDS is one of a few longitudinal studies along with the 1970 British Cohort Study (BCS70), the Longitudinal Study of the UK Census which links records from 1971, 1981 and 1991, and the British Household Panel Survey (BHPS). It is well known that cross-sectional analyses suffer from a number of limitations which can be overcome by longitudinal studies (Davies, 1994). Such limitations include the compounding effect of age, cohort effects and ambiguities in the direction of causality.[1]

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[1] For a detailed discussion of the limitation of cross-sectional analysis, see Davies (1994), pp. 20 - 40.

The direction of causality merits more discussion here. In cross-sectional studies, for example, the relationship between qualifications and employment is not always easy to disentangle. It is generally understood that higher qualifications lead to better jobs. However, some qualifications can be gained after one has already had one, two or even several jobs. It is extremely difficult to decide what leads to better or poorer job prospects without knowing the time when the qualifications are obtained. The effect could have come from qualifications or previous job experience or both. With longitudinal studies, this problem can be avoided by taking the time at which the qualifications were obtained into consideration.[2]

One of the main advantages of longitudinal studies is that they avoid the errors of retrospective recall[3] since they gather data contemporaneously. This argument is however criticised as a rather misleading half-truth (Rutter, 1981: 335) as most longitudinal studies rely heavily on enquiries about past events. In this respect, NCDS is hardly an exception. In the 7-year-old sweep, they had to cover the whole seven years from birth and the next sweep had to gather information for a four-year period between age seven and eleven. Even heavier reliance on retrospective recall was found in the sweep five survey in which the cohort members were asked to complete a self-administered questionnaire 'Your Life since 1974' covering events between 1974 and 1991 - a 17-year period! However, unlike cross-sectional studies, the subjects of study are contacted more than once in most longitudinal studies. Thus the data can be checked using information collected at different time points.

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[2] A more detailed discussion using a similar example is available in Gershuny (1994) where he and his colleagues described the advantage of longitudinal data with specific reference to the BHPS.
[3] Dex (1991) offered an extensive discussion on the reliability of recall data.

In the NCDS, there are key variables such as ability at age 11 and the child's cultural activities at age 11 that cannot be reliably measured retrospectively using cross-sectional studies. The NCDS has the advantage of collecting information when the events take place. The NCDS also collected information at several time points, and in different forms at the same time point. For example, questions on respondents' jobs were asked in the self-completion questionnaire and in the interview conducted by trained interviewers. Certain cross-checking and reliability tests of the data can therefore be carried out to avoid or at least minimize errors arising from these problems.

The Data

The National Child Development Study (NCDS) is a large-scale longitudinal study of roughly 17,000 babies born between 3rd and 9th March 1958. It is designed to be nationally representative of all children in Great Britain (see Shepherd 1995). The NCDS has its origins in the Perinatal Mortality Survey (PMS), sponsored by the National Birthday Trust Fund. This was designed to examine the social and obstetric factors associated with stillbirth and death in early infancy among the children born in Great Britain in that one week. Since then, there have been five major follow-ups or sweeps of members of the birth cohort. Each was based on an attempt to trace all those who had participated in any earlier follow-up, excluding those known to have died, emigrated, or declined further co-operation. For each of the first three follow-ups the birth cohort was augmented by tracing through schools to include immigrants born in the relevant week. The five follow-up sweeps were conducted in 1965 (when the children were aged 7), 1969 (aged 11), 1974 (aged 16), 1981 (aged 23) and 1991 (aged 33).

The First Three Follow-ups: NCDS1 (1965), NCDS2 (1969) and NCDS3 (1974)

The NCDS began with the first follow-up survey in 1965 when the children reached the age of seven. The National Children's Bureau was commissioned by the Central Advisory Council for Education (the Plowden Committee) to retrace the cohort and monitor their physical, educational and social development. Information in the first three follow-ups was obtained from four main sources: the children (cohort members themselves), the parents, Local Authority Medical Officers, and schools.

After piloting in a number of local authorities, the interview schedules and questionnaires were despatched to schools, and to local health authorities, who organised their distribution to medical officers and health visitors who were to carry out the medical examinations and parental interviews.[4]

At each age the parents (in most cases the mother alone) were interviewed (Parental Interview) in the home by an officer of the local authority, usually a Local Authority Health Visitor, using a structured interview schedule. In general, questions in the following areas were asked: father's and mother's occupation, length of parents' education, smoking habits, aspirations and expectations for child's future education and occupation, family relationships, parent-school contacts, child's general health and information on accidents and so on.[5] A wide range of information on the child's social background used in this thesis is taken from these three earlier sweeps of the data set. This includes father's occupation, originally measured by socio-economic group, parents' age when they left full-time education, parents' spare-time activities

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[4] In addition to this general method, further methods were also used in the third follow-up. These include the direct correspondence with the independent schools and the take over of responsibility (in some local authorities) for distributing and returning forms by the research team as a result of local government reorganisation.

[5]See Shepherd, 1995, p.5 for more details.

(e.g. how often they read a newspaper or books, and whether they belong to a library). It also includes the child's after school activities (i.e. whether the child writes stories, paints, borrows books from the library, and listens to non-pop music).

The second source of information was collected by local authority medical officers. Medical examinations were carried out at each age and the information obtained was used to compile a medical history.

The third source of information came from the schools questionnaire. Again, at each age, the schools (usually headteacher or class teachers) completed a questionnaire providing information on the school and on the study child. A wide range of information from this questionnaire was obtained: type and size of school, social composition and academic record of the school, provision of sex education and career advice, parent-school contacts, attendance record, ability ratings, and examination entries. Data on the type of school (i.e. comprehensive, secondary modern, grammar, independent or direct grant maintained school) that the child attended are drawn from this questionnaire and they are included in the analysis of degree education and subject choice.

At age seven, eleven, and sixteen, a series of tests were carried out in schools to obtain information on the children's ability and attainment. These included comprehension, drawing and arithmetic / mathematics and general ability tests. The total score on the general ability test[6] is used in the analysis of degree education in the following chapter.

It was not until the age of eleven that there was a questionnaire for the study child. It obtained information on leisure activities and attitudes to school. The children

[6] This is a combined score of verbal score and non-verbal tests.

were also asked about their imagined life at the age of 25. Information on respondents' cultural activities is derived from this questionnaire. At the age of sixteen a more substantial questionnaire was designed for the cohort members. It contained questions on attitudes to school, future educational and occupational expectations, aspirations and reasons for leaving school and choosing a job.[7]

Information on examination records was obtained in 1978 by writing to schools which cohort members were known to have attended at the time of the 1974 follow-up (NCDS3). Schools were asked to provide information about all CSE, GCE, and SCE (in Scotland) examinations entered up to 1978, the time is when the cohort members had reached the age of 20. Details of any individual who was known to have gone to study elsewhere were also obtained from the institutions concerned (Steedman, 1983). These examination results at CSE, GCE O level and A level, and SCE in Scotland are used as explanatory variables in the analysis of subject choice.

The Fourth Follow-up: 1981 (The Early Adult Years)

In contrast to the first three follow-ups, information in NCDS4 was obtained entirely from the cohort member through interviews carried out by professional survey research interviewers.[8]

The target sample of the 1981 survey consisted of all those who had participated in at least one of the earlier NCDS follow-ups, excluding those known to have emigrated or to have died. Unlike the first three follow-ups, no new immigrants were included. The National Children's Bureau was responsible for the initial tracing.

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[7] For more details, see P. Shepherd, 1995, p.7.

[8] It should be noted that the quality of data has also improved since properly trained professional survey research interviewers were used instead of health visitors.

Details of names and addresses were then passed to National Opinion Polls Market Research Limited (NOP) and Social Community Planning Research (SCPR) who carried out further tracing and subsequent interviews. The survey was carried out between August 1981 and March 1982.[9]

The cohort members were 23 years old at the time of the 1981 interview. They had reached a stage in their life cycle when marked transitions had taken place. These transitions include the moves from school or full-time further and higher education to work, from dependent status in their families of origin to independent status as members or heads of new households, from single status to partnership with married partners or cohabitees, and from childlessness to parenthood (Shepherd, 1995). In the survey, detailed information was sought in the following areas:

- Employment, unemployment and periods out of the labour force. This includes details of economic status for each month since March 1974; dates and durations; occupation; industry; earnings; training; promotion; hours; job satisfaction; job choice; job behaviour; participation in government special schemes and so on. This is the main area in which information was drawn for the analysis of the respondents' first job attainment and unemployment in 1981 in Chapters Four to Six.
- Apprenticeship and training. This includes details of dates and durations; trades and skills; courses and qualifications; and reasons for non-completion.

[9] Completed questionnaires were checked by NOP and SCPR and the data were then transferred to computer. Preliminary editing was done by NOP and SCPR, and more detailed checks were carried out by the Bureau. The majority of open-ended questions were coded by SCPR using coding frames developed by the Bureau research team. The remaining open-ended questions, including all those relating to health, were coded by the Bureau.

- Post-school education. Questions were asked on dates and duration; courses; subjects; qualifications; failed courses; courses not leading to qualifications; planned courses; finance; literacy and numeracy problems. Information on respondents' highest level of qualifications in 1981 is extracted from the above two sources.

In addition to the above information, questions were asked relating to respondents' marriages and family formation[10], housing and household, family income, savings and investment, health state, voluntary and leisure activities.

This thesis uses much of the information which was drawn from this sweep. This includes data relating to respondents' first jobs, such as the age when they started their first jobs, industrial sectors and the size of the establishments of their jobs as well as their age and the highest qualifications obtained when they left full-time education, and unemployment.

The Fifth Follow-up: 1991 (Life at 33)

The fifth follow-up[11] was designed to obtain information from all cohort members, their husbands and wives or cohabitees.[12] The NCDS5 survey was conducted during 1991. The interviews were organised by the fieldwork agencies in

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[10] Details of dates of marriage(s) and cohabitation(s); age and prior status of partner(s); abortion and miscarriage; dates of birth and birth-weight of children and experience of lone parenthood were obtained.

[11] The design and content of the pilot surveys were developed and administered by the SSRU. There were six separate rounds of piloting involving eleven different pilot surveys. The early pilot surveys were concerned with only one or two topic areas and were based on small samples of non-cohort respondents of approximately the same age. All pilot surveys were completed in 1990.

[12] Information was also collected from the natural or adopted children of one in three cohort families; and from the mother of these children (Ferri, 1993). The mother and child questionnaires are based on instruments used for the US National Longitudinal Survey of Youth (NLSY), and their inclusion in NCDS5 was designed to permit comparisons to be made.

different parts of the country, and three surveys were conducted: the Cohort Member Survey, Partner Surveys and the Mother and Child Survey[13].

There were three major parts of the Cohort Member Survey: an event history questionnaire ('Your Life Since 1974'), an attitude self-completion questionnaire ('What do you think') and an interview questionnaire conducted by trained interviewers.[14] In 'Your Life since 1974', cohort members were asked to complete a questionnaire designed to recover events or activity history data relating to marriage and cohabitation; children; jobs; periods not in a job and housing. This is where information on respondents' occupational attainment and their economic status in 1991 is drawn from. In "What do you think", they were asked to complete a questionnaire on attitudes.[15]

The interview questionnaire was designed to recover detailed information in the following areas: current or last and previous jobs; spouse or partner's current job and earnings; unemployment; education and training courses; qualifications held; literacy and numeracy problems; marriages and cohabitations; pregnancies and children. Other areas include housing circumstances; aspects of housing history; income from state benefits and other sources; savings and investments; health and health history; drinking and smoking habits; and citizenship. Again, only the information on cohort members' current or last jobs is used in the present study.

For the analysis in this study, data on respondents' jobs and qualifications at the age of 33 all come from the cohort member survey in sweep five, particularly the

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[13] The partner survey and mother and child survey are not used in this thesis.
[14]There was also a self-completion questionnaire of malaise inventory on tendency towards non-clinical depression, and the height and weight of cohort members were measured by interviewers.
[15] Issues include marriage; battery; women's roles; children and family; social support; environmental issues; racism; sexism; political trust or cynicism; orientation towards work; job control and perceived skills. This part of the data is not used in the present study.

changes since 1981. Such information includes respondents' jobs, industrial sectors and the size of the establishments of respondents' jobs, further qualifications gained since their first jobs, and the subjects of any further qualifications.

Strengths and Limitations of the NCDS

Strengths of the Data - Why NCDS?

Despite its limitations in response bias among certain groups such as ethnic minorities and low-achievement groups (which I shall discuss in the following section), the NCDS remains one of the most comprehensive data sets for an enquiry involving education and occupation. It is a nationally representative sample and hence generalisation to the population born at that time is made possible.

As was mentioned in the introductory chapter, existing research on class inequalities in educational and occupational attainment has largely focused on the overall relationship between origins, education and destination. There have been limited attempts to look at the micro-level mechanisms which may help explain these inequalities, such as the cohort's subject choices in higher education and the differences in the methods of job search. This is possibly due to the lack of appropriate data. In fact, most large data sets currently available do not contain such detailed information of the above-mentioned variables.

The NCDS has a distinct advantage over other large-scale data sets because it has a huge amount of information about the area of children's upbringing. This includes the activities that the children engaged in after school and what the parents did in their spare-time. Information was also collected on parents' interest in their child's education, whether the parents read to the child, whether they had activities

together, parents' and teachers' expectations of the child's educational career, general ability test at age 11 and the schools which respondents attended. Information on this wide range of topics is simply not available in any of the other data sets. The availability of all the above information makes it possible to operationalise the concept of cultural resources. In addition, with the information on respondents' first jobs and subsequent jobs, investigation can be made to compare the effects of qualifications on recruitment and on promotion.

For those who went to university, the NCDS also collected information on the subject areas of the courses studied. This makes the examination of subject choice in higher education possible. When they entered the labour market, the NCDS recorded information on the cohort members' first job and subsequent jobs. Information on their employment in different industrial sectors is also available. Again, the General Household Survey and the Longitudinal Study of the UK Census did not collect information about first jobs. All this rich information allows a detailed investigation of the processes behind educational achievement and occupational outcomes using a dis-aggregated approach. For example, the value of different degree subjects in the labour market, and the value of qualifications in different industrial sectors can be examined.

In short, the major strength of the NCDS is that information was collected much closer to the time when the event happened than retrospectively, hence causal inference is more warranted. However, as we shall see, the NCDS data are not without limitations.

Problems with attrition

Due to its longitudinal nature, the NCDS inevitably suffered from problems arising from attrition. Any element of non-response could pose a danger of bias. Table 2.1 summaries the target and achieved sample sizes of each follow-up.

Table 2.1: Sample sizes in the PMS/NCDS

	PMS 1958 Birth	NCDS1 1965 7 years	NCDS2 1969 11 years	NCDS3 1974 16 years	NCDS4 1981 23 years	NCDS5 1991 33 years
Target Sample	17,733	16,883	16,835	16,915	16,457	15,628
Achieved Sample	17,414	15,468	15,503	14,761	12,537	11,363

Source: Shepherd (1995), NCDS Working Paper 1, SSRU, City University.

The overall response has been satisfactory though it declined from 98 percent in 1958 to 76 percent in 1981. In increasing number of refusals can be seen since the first post-school survey. (See also Table 2.2) The main difficulties lie in tracing members of the birth cohort.[16]

[16] A wide range of methods was used to trace the NCDS cohort members throughout the five follow-ups. For all the first three follow-ups, information was mainly collected by contacting all schools in the country to identify which pupils were born in the survey week. In the fourth and fifth follow-ups, other methods were used. These included the last known addresses, media appeals, national health service central register, local authority housing departments, and national insurance records. Since the 1981 survey an annual mailing of a birthday card accompanied by a reply slip and a pre-paid envelope was introduced to maintain ongoing contact with members of the NCDS cohort. Through the use of this reply slip, basic demographic and economic information was obtained. These included any corrections or change of name or address, marital status, economic status, consumer durables, weight, number of children and housing tenure. Tracing continued during the main fieldwork and DSS Letter Forwarding Service has also been used to find the cohort members. This is based on identifying individuals from National Insurance records, and a similar arrangement was agreed with the Driver and Vehicle Licensing Agency. For more details, see Shepherd (1995), NCDS User Support Group Working Paper 1.

Table 2.2: Response to the NCDS Follow-ups

Cohort age (years)	*Target Sample(*) (n=100%)*	*Some data (%)*	*Refused (%)*	*Others without data (%)*
Birth	17,733	98	-	2
7	16,883	91	1	8
11	16,835	91	5	4
16	16,915	87	7	6
20	16,906	85	-	15
23	16,457	76	7	17
33	15,628	70	10	20

(*) Number from Previous stage plus known immigrants, less deaths and emigrations.
Source: Shepherd (1995) NCSD Working Paper 1, SSRU, City University.

It is possible to check for response bias by comparing the characteristics of the achieved sample for any survey with the target sample. The results of the comparison of the achieved and targeted sample appear to be reassuring. Up to the age of 16, little or no difference was found in relation to indices such as social class, region, attainment test scores and measures of physical development. Although the response rate was reasonable, there is evidence of slight under-representation of those who might broadly be regarded as 'disadvantaged' in relation to family, housing and financial circumstances (Fogelman, 1976, 1983; Shepherd, 1995).

Response patterns for the 1981 survey show a continuation of the same trend. Those who were interviewed were more likely to be from middle class backgrounds; those with higher school attainment; those from smaller families; and those who grew up in slightly better housing circumstances. However, according to the NCDS user support group, such biases are small though statistically significant (Shepherd, 1995).

One can also cross-check possible biases of data attrition by comparing the NCDS to other national data sets. A recent study using the NCDS (Dale and Egerton, 1997) did just this by comparing the NCDS sweep 5 data on qualification with the distribution of Census level qualifications for men and women aged 33 who were

drawn from the 2 per cent individual file of the Samples of Anonymised Records (SARs) from the 1991 Census. They found that women in the NCDS had a slightly higher percentage of degree level qualifications than in the SARs. About 3 per cent more NCDS cohort members - both men and women - were reported to have below degree level but above A level qualifications (such as teaching and nursing, HNC/HND).[17] These differences were thought to be related to the greater attrition rate in the NCDS of those with lower educational qualifications (Dale and Egerton, 1997:4). They suggested that this may be due to differences in methods of data collection between the two data sources, which may affect the extent to which educational qualifications were recalled and accurately recorded. Interviewing methods used in NCDS, including showcards listing detailed qualifications may also produce a more complete recording than the Census where the schedule provided very limited prompts for qualifications, which were completed by the 'form-filler' for all household members (Dale and Egerton, 1997).

Dale and Egerton also compared the NCDS against data from the British Household Panel Study (BHPS) for respondents aged 20-34.[18] Again, they suggested that the NCDS members were more likely to have higher qualifications, but the difference was smaller than that in the comparison with the Census. They argued that this was likely to be a result of sample attrition in the NCDS and the overall distribution of qualifications across the different data sources is remarkably similar.[19]

Immigrant status and ethnicity appear to be a more serious problem in the 1981 survey. Young people of Caribbean origin were under-represented by nearly one

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[17] Dale and Egerton, 1997: 5, Table 1.1.
[18] ibid.,: 6, Table 1.2.
[19] A recent paper by Heath and Cheung (1997) also compared their results using the NCDS data against the British Household Panel Study (BHPS) whose results are also found to be highly similar.

third, those from the Indian subcontinent by about one quarter, and those from Ireland by about one tenth. The problem with small numbers and the probable significant bias means that NCDS may not be the best available data set to study the experience of ethnic minorities (Fogelman and Wedge, 1981; Shepherd, 1995).

There are a number of ways to deal with missing data. Firstly, information can be constructed by using existing evidence from the respondents available in the data. This imputation technique is widely used to deal with problems of missing data (Marsh, 1988; Kerckhoff, 1993). Despite problems with high attrition, as a longitudinal study the NCDS has the advantage that those missed at one stage may have data from another stage. For example, information on father's occupations was available when the respondents were at age seven, eleven and sixteen. For this thesis, data on father's occupations are extracted from sweep three when the respondents were aged sixteen; where data are missing at this time point, father's occupations are taken at one of the earlier time points, namely at sweep two or sweep one. This proves to be an effective way of minimizing missing values.

Secondly, as noted by Dale and Egerton (1997), one can construct missing value dummy variables for regressors with considerable numbers of missing values to test whether the loss of cases affects the estimation of coefficients.[20] They argued that the advantage of this method is that 'the denominator of the regressor dummy variables need not be corrected for missing values, since the entry of the missing value dummy will automatically correct for the effects of missing values. This decreases the loss of cases through missing values' (Dale and Egerton, 1997:

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[20] This method was originally recommended by Cohen and Cohen (1983) and is also followed by Kerckhoff, 1993.

Appendix 5). This method is followed throughout this thesis and in most cases these missing values have very low correlations with the response variables and they are often statistically non-significant. These are therefore dropped from the final equations and not reported.

As has been pointed out elsewhere, the NCDS represents a single age-cohort and it is important to locate this cohort in its context (Dale and Egerton, 1997). The NCDS cohort had experienced a series of changes due to the comprehensive reforms of schooling, expansions in higher education in the 1960's, following the Robbins Report and raising of the school-leaving age in 1974 (when they were aged 16). Women and, to a lesser extent, working class students were able to benefit from these changes[21]. Moreover, the deep recession at the end of the 1970's and the beginning of the 1980's led to higher graduate unemployment during this period. These labour market conditions affected the NCDS cohort members as those who went to universities graduated between 1979 and 1981. For this reason, the NCDS graduates' initial employment experience may be rather atypical and interpretation of these results has to be cautious. Even so, the main thrust of this study is on the relationship between subject specialization and labour market outcomes; and on the different effects of qualifications on recruitment and promotion between industrial sectors. With respect to this topic, we should be able to generalize the NCDS cohort members' experience across other cohorts.

[21] See Heath and Ridge, 1983 and Heath et al., 1992 for evidence of a narrowing gender gap in educational attainment.

A major limitation of studies of a single cohort is that it is not suitable for analysis of trends or changes over time. Hence, this study makes no attempts to consider over-time changes.

Finally information on participation in formal culture (theatre, concert and museum attendance) was not available in the NCDS[22]. Therefore only proxy measures of cultural capital can be used.

Methods of Analysis

The purpose of this study is to explore the factors responsible for educational and occupational success with a disaggregated approach. The research strategy is therefore a quantitative, secondary analysis of survey data. To assess the factors explaining differential success in higher education, and the differential access to high-level jobs, statistical modelling is an appropriate technique. Modelling has the advantage of allowing us to distinguish between different empirical associations in survey data. Interrelationships can be considered simultaneously. We can also assess the effect of a particular factor independent of other relevant factors. It also makes testing of rival hypotheses possible.

The use of multivariate analyses can be divided into three types, ranging from linear regression of the ordinary least square type, to binary and multinomial logistic regression. The type of modelling method depends on the level of measurement of the response variable. Linear regression is commonly used when the response variable is measured on a continuous scale, such as income or scores of any kind of test. In this

[22] Despite both parents' and children's reading habits being defined as 'scholarly' culture, information on children's after-school activities on painting, drawing, listening to music other than rock music can be argued as "middle brow" activities (as defined by DiMaggio), rather than participation in formal culture.

study, the Hope-Goldthorpe scale of occupational desirability will be used to measure respondents' jobs. Since this is a continuous measure, the technique of linear regression will be used throughout Chapter Four to Chapter Eight in the analysis of respondents' first job attainment and their jobs in 1991. Diagnostic checks are also carried out by examining the residuals which are normally distributed.

For analyses involving categorical response variables, the use of linear regression is inappropriate. The reason is that in this type of analysis, one is interested in the ways in which the risks of being in one category of the response variable instead of the other(s) varies according to a range of explanatory variables. In other words, the proportion of respondents in one category as compared to the other(s) is the matter of concern. Linear regression estimated with the ordinary least square method may give fitted values for the proportion which lie outside the admissible range of 0-1 (Aldrich and Nelson, 1984). It is therefore not a suitable method to handle categorical response variables.

Logit transformation of the proportion can overcome this problem when dealing with categorical variables. In a logistic regression, the response variable is a simple dichotomy. In Chapter Three this method of analysis will be used to investigate higher education attainment and degree subject choice, and in the modelling of unemployment in Chapter Four.

Chapter Three

Social Origins, cultural resources, higher education and subject choice

It is widely agreed that educational expansion in most western European countries during the post-war period has shifted the barrier of equality of educational attainment to higher educational levels (Raftery and Hout, 1991; Heath, Mills and Roberts, 1992; Egerton and Halsey, 1993; Jonsson and Mills, 1993; Shavit and Blossfeld, 1993). As Heath, Mills and Roberts observed, the gap in higher education between students from higher and lower social origins has in fact widened. As I noted in Chapter One, most research on educational attainment has focused on the level of attainment, such as the differential access to higher education (Halsey, Heath and Ridge, 1980; Blossfeld, 1990; Heath, Mills and Roberts, 1992; Blackburn and Jarman, 1993; Egerton and Halsey, 1993; Shavit and Blossfeld, 1993). Access to different subject groups in higher education is rarely discussed. We know that class and gender have important influence on the level of educational attainment and male and female pupils tend to specialize in different subjects at schools. It may be that these ascriptive factors also affect subject choice in higher education.

Will inequalities totally disappear once the working class and women gain equal access to higher education? Is there also equal access to different faculties in universities? Some may argue that subject choice is only a matter of personal preference or aspirations and therefore does not constitute inequalities. However, unequal access to different subject groups or faculties in higher education may lead to differential occupational attainment. And throughout this process, if individuals from certain backgrounds have an advantage over the others in entering more 'elite'

subject groups[1] and subsequently more desirable social positions, this would be more than simply a matter of personal preference or aspiration. None the less, few researchers have acknowledged these issues in the sociology of education, which badly need a thorough examination.

In this chapter, I shall examine whether not only degree educational attainment, but also subject choice in higher education is in fact associated with social background. More importantly, as will be discussed in Chapter Four, do these choices have a subsequent effect on graduate employment and occupational attainment? That is, both on getting a job or not, and on getting what type of job?

Prior to the examination of empirical evidence, it is necessary to recapitulate some of the theoretical concepts relevant to the relationship between social origins and subject choice. First, a summary discussion of the theoretical concepts relating to both higher education attainment and subject choice will be presented. Second, using data from the National Child Development Study (NCDS), I shall examine the effects of social origins and family cultural resources on higher educational attainment. Third, the association of these background factors and subject choice in higher education will be investigated in detail.

Social Origins, Cultural Capital and Subject Choice

As I have discussed in Chapter One, differential access to higher education may not be simply a result of financial constraints. Cultural background may also have an important role to play (Bourdieu and Passeron, 1977). Bourdieu believes that status inheritance in society is achieved not only through the transmission of

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[1] The term 'elite' describes faculties such as Medicine and Law, which have a strong link with 'elite' professions in the labour market.

economic or financial capital, but also through the transmission of cultural capital. Bourdieu suggested that class inequalities in educational attainment are in fact inequalities reproduced by the educational system which favours pupils with a rich background in cultural capital. He maintained that, *capital*, as a form of power, entails the capacity to exercise control over one's own future and that of others. The distribution of capital in society is highly unequal and individuals strive to maximize their capital. The amount of capital they are able to accumulate defines their social trajectory and at the same time the transmission of various forms of capital serves to reproduce class distinctions.[2] He distinguished the immaterial forms of capital – cultural, social and symbolic – from material and economic capital. Unlike cultural capital (educational credential) or social capital (social connections), economic capital is essentially 'immediately and directly convertible into money' (Bourdieu, 1986:243).

Though Bourdieu recognised status inheritance through economic reproduction[3], he maintained that status could be reproduced from parents to children in ways not directly dependent on financial inheritance. Children from different social backgrounds are socialised into accepting different values, codes of conduct and aspirations in very different ways (see Bourdieu and Passeron, 1977; Halsey, 1977). The *choice* of education and *discipline* is seen to be a product of family education which in fact creates class inequalities in achievement (Bourdieu, 1977). The school adopts the habitus[4] (values and practices) of the dominant class (upper and middle

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[2] See Calhoun (1993) for a more detailed discussion on Bourdieu's theory.

[3] See Boudon (1974), Gambetta (1990) and Shavit and Blossfeld (1993) for discussions of the importance of economic capital or financial constraints in educational attainment.

[4] Bourdieu defined habitus as 'a system of durable, transposable dispositions which functions as the generative basis of structured, objectively unified practices'. It can also be understood as a person's

class) as the natural and proper kind of habitus. Children who are more familiar with these practices and values at home acquire the linguistic and cultural competence to survive selection and succeed in the educational system.

Bourdieu established that there is a strong association between social class and cultural capital[5] and between educational levels and cultural resources. Members from the privileged classes were found to consume more of these cultural products, and the more educated were likely to possess a higher level of cultural resources. He also argued that cultural practices are not necessarily related to financial constraints[6].

There is an important distinction between different sections in the privileged classes. Those who are richest in cultural capital may not be the richest in economic capital[7] and the former are more inclined to invest in children's education as well as cultural activities. In France, the most culturally privileged sections of the middle class, such as the sons of primary school and secondary school teachers are more successful in the academic market than the least culturally privileged sections of the upper class (e.g. managers and bureaucrats). It is the children of the culturally wealthy parents who benefit most from their family upbringing and this cultural competence is most favoured by the educational system.

> An educational system which puts into practice an implicit pedagogic action, requiring initial familiarity with the dominant culture, and which proceeds by imperceptible familiarisation, offers information and training which can be received and acquired only by subjects endowed with the system of predispositions that is the condition for the

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knowledge and understanding of the world. It is therefore reasonable to understand habitus as values and practices.

[5] To measure cultural capital, Bourdieu defined a range of cultural habits as cultural resources. To assess one's cultural habits, he used activities that demand a cultured disposition, such as reading, theatre, concert, art-cinema, and museum attendance (Bourdieu, 1977: 488).

[6] For example, although museum entry is often free, the frequency of museum visits among the working class is far lower than that of those from a higher social origin.

[7] Bourdieu had successfully shown this by comparing the theatre-going and serious reading habits between teachers and managers, Head of industry and commerce. He found that a much higher proportion of teachers practise both activities than the latter group (Bourdieu, 1977: 497-498, Table 5).

> success of the transmission and of the inculcation of the culture. By doing away with giving explicitly to everyone what is implicitly demanded of everyone, the educational system demands of everyone alike that they have what it does not give. This consists mainly of linguistic and cultural competence and that relationship of familiarity with culture which can only be produced by family upbringing when it transmits the dominant culture. (Bourdieu, 1977: 494)

Above all the reproductive nature of the educational system is most pronounced at the level of higher education. Not only do the privileged classes have a much higher level of cultural capital than the other classes, they also have, in Bourdieu's words, 'at their disposal the means of ensuring for this capital the best placing for its investment (that is to say the best establishments and the best department)' (Bourdieu, 1977: 497). More importantly, the segregation established at the beginning of secondary education among students from different establishments and different departments is reinforced at university level. In other words, the influence of privileged backgrounds on status inheritance finds its way rather indirectly through the type of secondary school and the type of subject studied at university.

With rapid expansion of higher education and the grant and loan scheme introduced to help working class students, the reason behind the persistence of inequalities in higher education is not simply an economic one. The cultural capital thesis and its implications for access to higher education and to more 'elite' disciplines, merit more empirical exploration.

Bourdieu and Passeron established that there is a strong association between social class and cultural habits, educational levels and cultural resources. The privileged classes not only consume more cultural products; they also exhibit different

habits in the choice of education and discipline of study for their children. Naturally, their choice of education is often the exclusive fee-paying private secondary education[8]. Children with a rich cultural inheritance are also more likely to survive the competitive educational system to the highest level of education.

For students from humbler social origins, even when access to higher education is gained, Bourdieu and Passeron believed that children from the least privileged backgrounds have to overcome cultural obstacles created by the school system in numerous and often very indirect ways. Moreover, differences in attitude and ability that are significantly related to social origins can still be found despite the fact that the students have all undergone many years of the standardizing influence of schooling (Bourdieu and Passeron, 1979). Social origin is seen to exert its influence throughout the whole duration of schooling, especially at the turning points of a school career:

> The awareness that higher education (especially in certain disciplines) is expensive and that some occupations can only be taken by those with wealthy parents, unequal knowledge about courses and the careers they lead to, the cultural models which associate certain occupations and certain educational options (Latin, for example), with a particular social background, and the socially conditioned predisposition to adapt oneself to the models, rules, and values which govern the school system. The whole sets of factors which make pupils feel and seem to be 'at home' or 'out of place' result in an unequal rate of scholastic achievement between the social classes, especially in those disciplines which presuppose previously acquired intellectual tools, cultural habits or income. (Bourdieu and Passeron: 1979: 13-14)

In other words, students from lower social origins who have survived elimination are still, in Bourdieu and Passeron's terms, 'educationally handicapped' as a result of

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[8] It was found that cultural background rather than material background had a more important effect on the type of education parents chose for their children (Halsey, Heath and Ridge, 1980: 103).

early, often ill-informed decisions, forced choices, or lost time. They found that students from more privileged backgrounds are reported to be more likely to have followed their family's advice about the choice of subjects. Hence the educational disadvantage suffered by working class students is expressed in the restricted choice of disciplines.

In short, Bourdieu and Passeron concluded that the slight improvement over time in working class children's chances of entering university is often offset by a strengthening of the mechanisms that relegate survivors into certain faculties. They also argued that the 'social specialisation' of faculties has a strong link with secondary education. The 'modern' stream schools working class pupils attend which are usually at the bottom of the academic hierarchy, channel them almost inevitably into the Science Faculties. In contrast, students from privileged class backgrounds more frequently take up Law or Medicine which have particularly strong links with elite professions in the labour market and could lead on to much easier access to the privileged class destinations.

Also, as was discussed in Chapter One, researchers in Britain attributed the differential use of education to class differences in value systems (Murphy, 1981; Kelsall *et al.*, 1970, 1972). Based on the argument that the working class value economic security more than the middle class, it was suggested that students from different class background choose different subjects (Kelsall *et al.*, 1970, 1972). Some subjects at university level seem to be particularly popular among the working class. For instance, Education is seen as a golden route for upward mobility, which attracts a high proportion of working class, particularly female, students. In Kelsall *et al.*'s study, it was reported that among the working class female graduates, no less than two

thirds of those with an occupation in mind planned to become teachers and showed little interest in other kinds of work. They argued that for students from humble home backgrounds, school teaching still represented a high status career and remained a principal channel of upward social mobility. Similarly Jackson and Marsden (1966) found that almost 90 per cent of the working class students who went to grammar schools chose to study Education at university, and most of them became teachers after completing their degrees. This may suggest that occupational aspirations could affect the choice of subject in higher education.

On students' aspiration and orientation, Brennan and his colleagues (1993) found that graduates in some areas show a greater 'propensity for extrinsic, pragmatic and materialistic' values than in others. They argued that this was so despite '…a shared and general understanding of the relative financial positions of various occupational groups in the labour market' (Brennan *et al.*, 1993: 34). They identified four types of orientations amongst graduates: careerist, inner-directed worker, altruistic and leisure. Graduates from pharmacy, business studies, law and accountancy were reported to be the most career-minded while those who studied fine art, design and textile showed a strong tendency to be inner-directed workers. Graduates with subjects in nursing, psychology and humanities were found to be more altruistic than others. And finally, social sciences, chemistry and communication studies graduates were identified as the leisure type.[9] Brennan *et al.* successfully demonstrated that there are important differences in orientations between graduates from different subjects. Although they mentioned the influence of social background

[9] The graduates were asked to indicate the importance of a series of items of various spheres of life to them, such as the opportunities for professional development, chances to exercise leadership, to have considerable leisure time, flexible working hours and so on.

on subject choice and the type of institution graduates attended (Brennan *et al.*, 1993: 46), there was no attempt to account for these differences and no formal tests were carried out to assess social origins' influence on subject choice.

As was discussed in the introduction, gender is another most important characteristic influencing both students' orientations and the choice of subjects. Girls who want to study a science subject are often encouraged to take biology, a 'human interest' science dealing with animals and people. However, it was argued that without physics or chemistry, biology on its own is often of limited use compared with other science subjects, in gaining entry to higher education and further education, or a job (Deem, 1978: 43). The fact that far more male students than female students take Mathematics, Physics, Science and Technology has been well documented (Kelsall, Poole and Kuhn, 1970; Acker and Warren Piper, 1984; Redpath and Harvey, 1987; Thomas, 1990; Brennan *et al.*, 1993). Girls of higher social origins, however, were also found to be more likely to take maths and physics at A level than their working class peers (Redpath and Harvey, 1987: 35, 40).

Past research has also shown that women see higher education in more 'intrinsic' terms than men, who put more emphasis on pay and faster career advancement (Redpath and Harvey, 1987). As was reviewed in the introductory chapter, researchers argue that the sex stereotyping of educational provision is reflected in public examination results and the post-school performance of pupils (Byrne, 1978; Deem, 1978). Most girls who take degree courses read Arts and Social Sciences, rather than Sciences, Mathematics or technological disciplines (Deem, 1978: 69). Despite recent studies which suggested that the gender gap in education has

narrowed[10] and an increasing number of female students are gaining access to higher education, remarkable gender differences by subject still persist, with women predominating in Arts subjects and men in Sciences[11] (Crompton and Sanderson, 1990). Even in higher education, students were found to attribute masculinity to Sciences and femininity to Arts (Thomas, 1990). In addition to Humanities and languages, education in particular has a high enrolment rate for female students. For decades, teacher training represented the main route for young women to enter higher education.[12] Teaching has always been seen as a feminine profession, not only because of its association with teaching and caring for young children, but also due to the long vacations which enable women to fit paid work around the requirements of looking after the family.

Some may argue that subject choice is dependent on public examination performance since some faculties may set higher entry requirement in terms of academic qualifications (Redpath and Harvey, 1987; Brennan *et al.*, 1993). Examples are Medicine, Law and even Engineering. If so, the selection process of students into different faculties might seem a fair competition, based on public examination results. On the other hand, public examination performance is arguably, to a certain extent, a reflection of the type of school attended. In the post-war era, the British state school system comprised of at least three major types of school: grammar, technical and

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[10] As summarised by Crompton and Sanderson (1987), girls' school-leaving attainment has improved considerably compared to boys. Fewer girls than boys leave school with no qualifications at all. In recent years, increasing evidence shows that girls have exceeded boys in gaining better public examination results and access to higher education (see Social Trends, 1995, 1996 for details).

[11] Crompton and Sanderson argued that these differences may lead to significant consequences given the differential impact of cuts by subject in higher education.

[12] Subject choice in higher education in many cases may reflect earlier stages of subject specialisation. Early specialisation is a complicated issue in its own right which could be developed in greater length and merits more detailed analysis. Exploring early specialisation at school is beyond the scope of this thesis. In the attempt to test Bourdieu's theory on 'social specialisation of faculty', the focus of this thesis remains that of subject choice in higher education.

secondary modern. Entry to grammar schools was highly selective based on the results of a competitive examination at age eleven. Pupils in these schools followed an academic syllabus and were prepared for higher education. In contrast, technical and secondary modern schools were much more vocationally oriented where pupils were expected to leave school after the minimum age with some vocational training. Even after the comprehensive re-organization in the 1960's and 1970's in which pupils were educated in mixed ability schools (i.e. non-selective schools), some grammar schools survived the reform.

Alongside these institutional reforms, secondary education in the private sector remained largely untouched. Evidence has shown that there is a strong association between privileged backgrounds and private school education (Halsey, Heath and Ridge, 1980:61). Private schools such as independent and former direct grant schools were not just fee-paying schools; they were also highly selective in their pupils' intake. The introduction of school certificates and formal competitive examination systems has led to a general spread of credentialism. It has been suggested that these schools are likely to have joined the credential society and their pupils are likely to perform well in public examinations (Heath and Cheung, 1997). Access to certain faculties may therefore seem to be a meritocratic selection based on public examination results, but one should not overlook the fact that these results may be a product of privileged selective secondary education.

Past Studies on Cultural Capital and Educational Attainment

Since Bourdieu's *Reproduction* first appeared in 1970 in French, the effect of cultural capital in the family on educational attainment has remained a topic seriously under-researched in Britain. Attempts to put Bourdieu's theory to empirical test were limited[13] until 1980 when *Origins and Destinations* appeared. Halsey, Heath and Ridge used parents' educational attainment and the type of school attended as measures of Bourdieu's concept of cultural capital. They assumed that educated parents who had passed through grammar school, public school, or university would have a greater understanding of the educational system and its culture, and would therefore be better equipped to help their children cope with the demands of that system (Halsey *et al.*, 1980: 75). They found that parents' educational attainment had an independent effect on children's educational attainment after controlling for the effects of other background characteristics. However, they argued that the concept of cultural capital is only 'useful as an umbrella term for a set of mechanisms through which families influence the formal educational experience of their children' (Halsey, Heath and Ridge, 1980:88). Their findings on the whole did not support Bourdieu's cultural capital thesis. They found that cultural capital had a direct effect on the type of school which children went to but that it had no net influence on educational attainment[14].

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[13] These limited attempts include Willis (1977) and Delamont (1984) who examined the notion of cultural capital and educational attainment by qualitative interviews with pupils in secondary schools.

[14] Other attempts to test the cultural capital thesis include Robinson and Garnier (1985), Jonsson (1987) and Gambetta (1987). They share a common feature of using father's educational attainment (Robinson and Garnier) or parental educational attainment (Jonsson and Gambetta) as a proxy for cultural capital. None of their results support the cultural reproduction theory. However, their measure of cultural capital was confined to the level of parental education and no information was collected on either parents' or children's cultural activities.

However their measurement of cultural capital was widely criticised.[15]

Abroad, the effect of cultural capital on educational attainment has been more widely discussed. In the United States DiMaggio (1982) has successfully demonstrated that students who participate in formal culture perform better at school, even when the effects of background and ability are controlled.[16] Self-reports of involvement in art, music, and literature were used to measure cultural capital.[17] DiMaggio (1982) not only found significant effects of cultural capital on high school grades, in a later paper he also established that cultural capital has a significant effect on both educational attainment (highest level achieved) and college attendance - with father's education, grades in Mathematics and English, and measured ability controlled - for both men and women (DiMaggio and Mohr, 1985).

In his attempts to test Bourdieu's theory of cultural reproduction, De Graaf (1986) compared the effects of financial resources and cultural resources on educational attainment in the Netherlands.[18] His findings revealed that the impact of cultural resources was small. He concluded that the association between parents' participation in high culture and children's educational attainment proves to be spurious. However, in a later paper, he found much stronger support for the theory,

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[15] Critics such as De Graaf (1986) pointed out that Halsey *et al.* never explicitly defined cultural resources. He suggested that two points remain unclear. First, whether well-educated parents have more knowledge of education and participate more often in formal culture. Second, whether the independent effects of parental social class decrease when participation in formal culture is controlled. Their study was also heavily criticised on the basis that only men were studied and that it lacked a proper measure of the concept of cultural capital (Delamont, 1990; Hammersley, 1981).

[16] See also DiMaggio and Mohr (1985) 'Cultural Capital, Educational Attainment and Marital Selection'. American Journal of Sociology, Vol.90, pp.1231-1257.

[17] DiMaggio's measures of a child's cultural capital include three dimensions: cultural attitudes, information and activities. These measures include cultural interests, cultural information, cultural capital and middlebrow activity. Further details of these measures can be found in DiMaggio (1982).

[18] Using Dutch data from the 1977 'Quality of Life Survey', he defined cultural resources as family's reading habits and participation in formal culture. Reading habits are measured by the number of hours per week parents spend reading and by the number of times per month parents visit the library. Participation in culture is measured by the number of visits parents make per month to museums (or galleries), theatres or concerts, and historical buildings.

using information on the cultural participation of both parents and children (De Graaf, 1988). He found that cultural resources had stronger effects on education than did financial resources. During the last decade or so, increasing attention has been drawn to the growing role of cultural resources in educational attainment across western and eastern Europe.[19] Most of these studies appear to support the cultural capital theory.

As far as Britain is concerned, the cultural resources thesis has received very little attention since *Origins and Destinations*,[20] especially its effects on higher education. This may be due to the lack of appropriate data which would permit systematic quantitative inquiries.[21] However, there has been a qualitative attempt to explore the cultural reproduction thesis. In her ethnographic study of a public school in Scotland, Delamont (1989) distinguished between the intelligentsia and the bourgeoisie. The 'intelligentsia' came from homes either with a parent employed in higher education or with a graduate mother with a career of her own, or both, were more academic than their peers from bourgeoisie backgrounds. Those from

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[19]Kolosi (1986) found some evidence that social reproduction operated through intergenerational inheritance of cultural life styles. He concluded that a cultural lifestyle was better determined by social origin compared to material life style. Studies in Australia came to similar conclusions: cultural capital has a consistent impact on the length of education, net of other social background and individual characteristics (Graetz, 1988); others reported that the 'scholarly' culture centred on reading leads to better educational performance (Evans and Kelly, 1995). For more studies on cultural resources or capital, see Lareau (1987), Mateju (1990a, 1990b) for a Czechoslovakian case; Katsillis and Rubinson (1990) for a Greek case; and Roberts (1995) for a Hungarian case.

[20] However, Egerton (1997) borrowed Bourdieu's cultural capital concept (measured by parents' educational level) to look at occupational inheritance.

[21] Bourdieu's argument that the educational system favours pupils of higher social origins receives some support from Kerckhoff's study using data from National Child Development studies (Kerckhoff, 1993). He found that teachers' evaluations of their students' post-secondary academic potential were strongly influenced by the students' families' socio-economic status and by prior assessments of the students' academic performance (reflected in the type of secondary school they attended and their primary school teachers' ratings). However, Kerckhoff did not discuss why teachers favour pupils of higher social origins, and whether it is because they exhibit values, attitudes and language skills which are more closely related to the dominant or 'legitimate' culture (i.e. possess more cultural capital). None the less, his findings could be interpreted to be consistent (although rather indirectly) with Bourdieu's argument about the role of the educational system as a mechanism for reproducing inequalities, in favour of those from higher social classes.

bourgeoisie families were the daughters of managers and owners of businesses who were either in industry or were self-employed. They were adequate but not outstanding academically. Delamont concluded that there were two family/class sub-cultures - one based on dual career families with cultural-intellectual capital, the other based on single earner entrepreneurial/ managerial fathers with financial wealth. Delamont's study revealed important cultural differences between different sections of the upper-middle class, in that the most academically successful pupils come from the most educated instead of the wealthiest families.

In the forthcoming analysis, I shall test quantitatively whether such differences have a significant impact on children's higher educational attainment.

As we can see, none of the previous British studies has looked at unequal access to different faculties in higher education. Building on previous research, the following analysis aims to address these questions: Is it true that parents with more education and cultural capital are able to help their children choose 'elite' subjects in higher education? How far do social class origins, gender and cultural inheritance affect subject choice? In other words, to what extent, in Bourdieu's words, are working class students limited in their choice of disciplines in higher education, especially in taking 'elite' subjects such as Law and Medicine? How important are these background factors when the types of school and examination results are taken into account? To what extent is private secondary education associated with 'elite' faculties in higher education as Bourdieu predicts?

Measuring Cultural Capital

It has been argued that cultural capital should be understood in two dimensions (De Graaf, 1986; Evans and Kelley, 1995): 'beaux arts' culture and

'scholarly' culture.[22] Whilst 'beaux arts' culture is more a matter of taste and preference, 'scholarly' culture, as De Graaf argued, is the cognitive capital which influences academic performance. 'Beaux arts' culture, mainly dominated by knowledge and the ability to appreciate formal art, may appear to affect educational achievement because of its links to scholarly aspects (De Graaf, 1986), or may not necessarily be essential to one's educational success. Rather, the interest and cognitive ability required for reading activities would be more directly related to the child's academic performance. Reading and the exposure to literature involve certain analytical and cognitive skills, which may have a more direct effect on one's educational success or failure.[23] When both parents frequently read newspapers, books and visit libraries, the easy availability of books and reading materials at home may provide a favourable 'family reading climate' in which the child can benefit. Hence, information from NCDS such as parents' reading habits and public library membership can be used as measures of parental cultural activities. A corresponding measure is also constructed to measure respondents' cultural activities when they were 11. Information on their spare-time writing and reading habits, taste in music and other artistic activities is taken from NCDS2 to represent their 'beaux arts' and 'scholarly' cultural activities. In the forthcoming analysis, I shall explore the importance of parental cultural resources on the higher educational attainment of the

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[22] Similar operationalisation of Bourdieu's cultural capital concept can be found in Crook, C. J., (1995).

[23] The possession of cultural capital of 'beaux arts' can be partially seen as conditional on financial advantage. The knowledge and ability to appreciate fine and formal arts, classical music and opera to a large extent depend on the family's financial resources to purchase and attend such activities. The fact that some children have more 'cultural capital' of a certain kind than others may simply be a reflection of their affluent class origins. One may argue that such culture can be accessed free of charge through public libraries, museums and galleries. However, without a family climate or encouragement or even suitable means of transport to get to the museum, these activities are relatively more difficult to access compared to what is available on the television. In contrast to the 'beaux art' capital, the 'scholarly' capital which comes from serious reading is often less dependent on economic resources.

respondents, and the association between the respondents' cultural activities in early childhood and their higher educational success.

If Bourdieu's theory is to hold, there should be a net effect of cultural resources on educational attainment in addition to the effect of social origins, or at least an intervening effect. In other words, the more cultured families, measured by *both* parental education and parental cultural resources, would have significant positive effects on children's educational achievement.

In order to give some idea of how Bourdieu's concept of cultural capital and other measures such as social origins, examination results and schools are operationalised, a brief description of the variables used in the analysis to follow is presented.

Brief Description of Variables

The variables used in this analysis are taken from different sweeps of NCDS. Most background variables come from sweeps one, two and three. These include father's socio-economic groups[24] (a collapsed version which measure respondents' social origins), parents' educational level (derived from the ages when they left full-time education) and parents' cultural activities (a composite score derived from variables giving the frequency they read books and newspapers, and whether they belonged to a library).

[24] The socio-economic groups (the GRO's classification of occupation -Variable 2385) of the father's occupations when respondents were 16 are recoded into eight categories. These include employers and managers (SEG1, 2); professionals (SEG 3, 4); semi-professionals (SEG 5); routine non-manual workers (SEG 6); own account workers (Self-employed) (SEG 12,13,14); manual foremen and supervisors (SEG 8); skilled manual workers (SEG 9); and semi-skilled and unskilled manual workers (SEG 7,10,11,15).

Social origin merits a bit more explanation here, as it is one of the major explanatory variables of the analysis throughout this chapter. As Bourdieu suggested, there are different sections in the privileged classes who possess different levels of cultural capital (Bourdieu, 1977: 497). In order to identify those in the dominant classes who are rich in cultural and economic capital, I distinguish the professionals from employers and managers.

As for parental education, in most previous research it is usually only the father's education which is taken into account in the analysis of educational attainment, whereas the mother's education is largely neglected (Halsey *et al.*, 1980; DiMaggio, 1982). The mother's education only began to receive more attention in the late 1980's when research increasingly recognised its influence on children's educational performance[25]. In this study, the levels of both parents' education are combined to form a single measure.[26] Variables N2396 and N2397 are used to derive parental educational levels. Both parents' ages on leaving full-time education were added up and then divided by two to give an average of the parents' age when they left full-time education. These are scored from 1 (under 13 years) to 9 (21 years) and 'over 21 years' is given a score of 10. In the cross-tabulation tables, these were recoded into a three-category variable: 1. University or tertiary level (age 18+); 2. Intermediate level (age 15-18) and 3. Secondary level or below (below age 15).

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[25] An increasingly number of sociologists in Europe and America came to identify and gather information on mother's educational level in addition to father's education as one of the key variables in educational and stratification research (Hout, Raftery and Bell, 1993; Jonsson, 1987, Tsai and Chiu, 1993; Treiman and Yamaguchi, 1993).

[26] In practice, there are high levels of educational homogamy among graduates (see Kelsall, Poole and Kuhn, 1972). Combining father's and mother's educational level can help keep the number of parameters down in the modelling exercise.

However, in the second part of the analysis (i.e. logistic regression), parental educational level is treated as a continuous variable.

Parental cultural activities were recorded when the child was seven and eleven. These include membership of a library (N1148, N1149) the frequencies of reading books (N186, N187) and newspapers (N184, N185). These variables are used as a measure of cultural resources. Two variables on cultural activities (father's and mother's) are constructed using the sum of scores of the three activities: reading books, newspapers and membership of a library. The scores are then added up to create a score from 1 to 13. Higher scores indicate higher frequencies of reading books and newspapers for both parents.[27] As for parental education, these were recoded into a three-category variable in the bivariate analysis: 1. Low level (score 1 to 5); 2. Medium level (score 6 to 9) and 3. High level (score 10 and 13). This composite score from 1 to 13 will be treated as a continuous variable in the logistic regression.

Respondents' cultural activities are extracted from Sweep Two data at the age of eleven. They were asked the following questions in addition to homework requirements:

- whether they read books (variable N935);
- whether they borrowed books from the library (variable N931);
- whether they wrote stories (variable N942);
- whether they drew or painted (variable N943);
- and whether they listened to music other than rock music (variable N937).

[27] The NCDS do not have information on parents' activities related to art and music. It is therefore not possible to make the 'beaux arts' and 'scholarly' distinction in parental cultural capital.

Scores are given to these after-school activities[28] according to their frequency. In order to distinguish the 'beaux-arts' cultural capital from 'scholarly' cultural capital, the scores of 'beaux-arts' activities (variables N943 and N937) are combined to form the variable ART. In other words, 'ART' is represented by the sum of scores of non-rock music listening and painting. Similarly, scores of 'scholarly' activities (variables N935, N931 and N942) are combined to construct a new variable READING. That is, scores of reading, borrowing books from libraries and writing stories are added up to form 'scholarly' cultural activities.

Information on school type was extracted from Sweep 3 (Variable 2102 and 2103). These schools are classified into the following types: independent and direct grant; grammar, comprehensive, secondary modern and others.[29]

It has been argued that access to higher education is also dependent on ability. With the NCDS information on verbal and non-verbal ability tests of the respondents at age eleven, it is possible to investigate the effect of ability on educational attainment. The combined score of the two tests (Variable 920) is used as a composite measure of general ability.

Social Origins, Cultural Activities and Education

Prior to the examination of subject specialisation in higher education, I begin by examining the relationship between cultural activities, social origins and educational levels. Bourdieu argued that different sections of the privileged class have different levels of cultural resources. Using data from the National Child

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[28] Three points for most days; two points for some days and one point for hardly ever.
[29] The 'other' category contains a residual group of technical schools (which very few respondents have attended), and various LEA and non-LEA special schools.

Development Study, let us first look at the relationship between social origins and higher educational attainment. The patterns shown in Tables 3.1 and 3.2 are largely consistent with Bourdieu's findings on French society.[30]

Whilst nearly three quarters of the professionals and nearly two thirds of the semi-professionals parents have high levels of cultural activities (Table 3.1), those from humbler social origins have much lower levels of cultural participation. Similarly, as Table 3.2 shows, educational level is also strongly associated with the level of cultural activities - more educated parents are shown to have a much higher level of cultural participation.

[30] Although the measures are different, remarkably similar patterns emerge.

Table 3.1: Social origins and parental cultural capital (row percentage)

	Parental Cultural Capital			
Social Origins	Low	Medium	High	N
Employers and Managers	6.6	43.5	49.9	1964
Professionals	1.4	25.0	73.6	643
Semi-professional	4.1	33.8	62.0	777
Routine non-manual	9.0	49.9	41.1	891
Own account	14.4	58.2	27.5	765
Manual foremen	11.1	58.2	30.7	1120
Skilled manual	17.1	62.2	20.7	3505
Semi and unskilled manual	23.3	62.2	14.5	2339
All	13.6	53.8	32.6	12004

(X^2 = 1822.6, d. f. = 14, p < .000)

Table 3.2: Parental educational level and parental cultural activities (row percentage)

	Parental Cultural Capital			
Parental educational level	Low	Medium	High	N
Tertiary or university	0.2	16.8	82.9	416
Intermediate level	9.8	48.2	42.0	5363
Secondary or below	18.6	60.5	20.9	6446
All	14.1	53.6	32.3	12225

(X^2 = 1161.6, d. f. = 4, p < .000)

Social background and higher educational attainment

Research has repeatedly demonstrated that the close link between social class origins and higher education has not loosened over the last few decades despite educational reforms to help working class students to enter higher education[31] (Heath and Clifford, 1991; Heath *et al.*, 1992, Blossfeld and Shavit, 1993; Marshall *et al.* 1997). Students of higher social origins are still disproportionately over-represented in universities.

[31] A scheme was introduced in the 1960's after the Anderson Report which introduced grants for full maintenance and fees to help working class students to go to university (Jackson and Marsden, 1966, see also Halsey, 1993).

Table 3.3 gives an overview of access to higher education by social origins. This portrays a striking picture of the inequalities in obtaining a degree in the NCDS sample. For our male respondents, 19.0 per cent of those from entrepreneurial and managerial homes succeeded in getting a degree qualification while 17.0 per cent of women from the same origin completed higher education. However, 38.4 per cent of men and 34.8 per cent of women from professional background obtained degree qualification, being the highest among all social origins.

Table 3.3: Percentage gaining degree education by social origins

	Percentage gaining a degree		
Social Origins	Male	Female	N
Employers and Managers	19.0	17.0	1879
Professionals	38.4	34.8	657
Semi-professional	19.2	20.4	742
Routine non-manual	13.4	8.7	872
Own account	8.6	8.2	725
Manual foremen	7.0	6.7	1042
Skilled manual	5.3	3.5	3319
Semi and unskilled manual	4.0	2.6	2197
All	11.1	9.4	11433

(X^2 for men = 466.16, d. f. = 7, $p < .000$; X^2 for women = 492.41, d. f. = 7, $p < .000$)

Such evidence is consistent with Bourdieu's argument that the professionals (especially lawyers and doctors) and to a lesser extent, the semi-professionals (especially teachers) are more inclined to invest in their children's education, and they are also the section within the dominant class who are richest in cultural capital. Whilst the higher educational attainment of our respondents from semi-professional origins is not very different from that of respondents who come from entrepreneurial and managerial backgrounds, only a very low percentage of students from more humble backgrounds obtained the same level of qualification. The figures shown are

5.3 per cent for male students from skilled manual working class origin and only 3.5 per cent for women of the same background. For students from semi-skilled and unskilled working class origins, the percentage is even lower - 4.0 per cent for men and 2.6 per cent for women which is much lower than the average (11.1% for men and 9.4% for women).

Although we cannot say for sure how similar the economic circumstances and income levels of the entrepreneurial, managerial, and professional families are, the fact that students from professional background perform twice as well as students from entrepreneurial and managerial backgrounds may be a result of the difference in cultural consumption of the professionals and their investment in their children's education.[32] Economic background, in this case, does not seem to adequately account for the differential access to higher education. As was discussed in the earlier section, evidence from past research has shown that parents' educational level is highly associated with children's educational attainment (See for example, Halsey, Heath and Ridge, 1980; Shavit and Blossfeld, 1993). Also, as Bourdieu argued, parental cultural capital or cultural resources also has an important role to play (Bourdieu and Passeron, 1977). If economic background only constitutes part of the story, there is a need to consider other factors such as parents' educational attainment and cultural resources.

Table 3.4 indicates sizeable differences in the chances of obtaining a degree according to parents' educational attainment. Parental educational levels form a linear relationship with the respondents' higher educational success. Students, regardless of

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[32] It has been suggested (Erikson and Jonsson, 1996) that social origin is a better indicator of economic position than income for two reasons. Firstly, income is not a good measure of economic standard among employers and the self-employed (including farmers). Secondly, class position may be more indicative of future or life-time income, income security, and chances of accumulating wealth.

their gender, tended to be high achievers if their parents had left education at later ages. Nearly 50 per cent of all male students whose parents had tertiary level education achieved degree qualification, and 44 per cent of all female students from the same background also acquired a degree. For students whose parents had little or no education, only a small fraction - around five per cent - survived the competitive educational system and reached degree level.

Table 3.4 Percentage gaining higher education by parents' education

	Percentage gaining a degree		
Parental educational level	Male	Female	N
Tertiary or university	48.2	44.0	409
Intermediate level	14.6	11.6	5400
Secondary or below	4.9	4.7	6060
All	10.7	9.3	11869

(X^2 for men = 432.26, d. f. = 2, p < .000; X^2 for women = 402.62, d. f. = 2, p < .000)

Apart from social origins and parental educational level, do cultural resources make any difference to children's higher educational attainment? Again I recoded the parent's cultural activities into three levels: low; medium; and high[33]. Table 3.5 gives the details.

Table 3.5: Percentage gaining higher education by parental cultural capital

	Percentage gaining a degree		
Parental cultural capital	Male	Female	N
High	20.2	19.0	1290
Medium	7.5	5.7	5150
Low	2.4	1.8	3175
Average percentage	10.7	9.3	9615

(X^2 for men = 212.62, d. f. = 2, p < .000; X^2 for women = 257.48, d. f. = 2, p < .000)

[33] To recode parental cultural capital into three levels is simply for ease of presentation in the bivariate analysis (1 to 5 points = low, 6 to 9 points = medium and 10 points or more = high). This variable will be treated as continuous in the logistic regression in the next section. Moreover, the NCDS data do not contain information on the 'beaux-arts' activities of parents. It is therefore not possible to distinguish between the 'type' of cultural capital as in the case of respondents.

Table 3.5 shows a substantial difference in the proportion of students gaining higher educational success according to the level of parents' cultural resources. Nearly one in five of those (20.2 per cent for men and 19.0 for women) who came from families with high levels of cultural capital obtained a degree. These figures decrease to only 7.5 per cent for men and 5.7 per cent for women coming from homes with a medium level of cultural capital. For the last group, whose parents hardly read newspapers, or books and were not members of a library, only a handful (around two per cent) managed to gain a degree.

Modelling Higher Educational Attainment

So far I have looked at the results of bivariate analysis. The findings indicate a strong relationship between social origins, parental educational level, cultural capital and the attainment of a university degree. The above discussion gives us an overview of the relationship between social and cultural background and higher educational attainment of the NCDS cohort. However, it is not informative about the net effect of cultural capital on degree attainment and subject choice, controlling for social origins. To formally investigate the association between higher education and cultural capital, a series of models were run using logistic regression techniques. This enables us to ascertain the net effect of social origins, cultural capital, parental education, school type, general ability at age eleven and higher educational attainment.

In Table 3.6 below, four different models are presented in order to assess the effect of different factors. The response variable is 'obtaining degree qualification'. In Model 1, I look at the effect of social origins on respondents' qualifications. In order to allow for comparison between the professionals and employers and managers,

respondents from entrepreneurial and managerial background (i.e. whose fathers were employers and managers) are treated as the base group. In Model 2, parental cultural capital and parental educational level are introduced, and both variables are treated as continuous. Model 3 shows the effect of school type and the child's spare time activities on reading and art. And finally in the last model, in order to show that children who have high scores on activities in reading and art are not simply those of higher ability, the child's ability rating at age eleven is controlled. The children's ability may be closely related to their cultural activities. If, however, the effects of respondents' cultural activities on obtaining a degree remain significant after controlling for ability, we can conclude with some confidence that cultural activities of the children have an important role to play in their chance of obtaining degree education.

Table 3.6: Logistic Regression of obtaining a degree qualification

parameters estimates	Model 1	Model 2	Model 3	Model 4
Constant	**-1.91 (.07)**	**-4.06 (.19)**	**-4.85 (.27)**	**-7.59 (.35)**
female	-.11 (.07)	-.10 (.08)	**-.25 (.09)**	**-.28 (.10)**
Social Origins-				
(1) Employers & Managers	0	0	0	0
(2) professional	**1.18 (.11)**	**.48 (.13)**	**.48 (.15)**	**.40 (.15)**
(3) semi-professional	**.49 (.12)**	.14 (.14)	.20 (.15)	.14 (.16)
(4) routine non-manual	-.19 (.13)	-.11 (.15)	-.11 (.17)	-.09 (.18)
(5) own account, farmers	**-.70 (.17)**	**-.46 (.19)**	-.36 (.21)	-.36 (.22)
(6) manual foremen	**-.70 (.15)**	**-.51 (.17)**	-.32 (.18)	-.24 (.19)
(7) skilled manual workers	**-1.26 (.12)**	**-.81 (.14)**	**-.57 (.14)**	**-.45 (.15)**
(8) semi/unskilled manual	**-1.41 (.14)**	**-1.04 (.18)**	**-.86 (.20)**	**-.67 (.20)**
Parental educational level		**.18 (.02)**	**.14 (.02)**	**.12 (.02)**
Parental cultural capital		**.15 (.02)**	**.11 (.02)**	**.09 (.02)**
School Type –				
comprehensive			0	0
grammar			**1.08 (.11)**	**.56 (.11)**
independent & direct grant			**.78 (.15)**	**.51 (.15)**
secondary modern & others			**-1.20 (.20)**	**-1.02 (.20)**
Child's Artistic activity			**.08 (.04)**	**.09 (.04)**
Child's Reading activity			**.17 (.03)**	**.09 (.03)**
Ability				**.07 (.01)**
Chi-square[34]	549.37	718.23	838.17	1114.01
(degrees of freedom)	(8)	(10)	(15)	(16)
N	10662	8159	6947	6947

Standard errors are given in parenthesis and significant parameters are shown in bold.

In Model 1 while gender is not significant in explaining degree educational attainment, we can see that the effect of social origins on respondents' attainment of degree qualification is highly significant. Apart from respondents of origin two and origin three - the professionals and the semi-professionals - those from all other social backgrounds are significantly less likely to obtain degree qualifications when compared to those from origin one - entrepreneurial and managerial backgrounds. It is clear (as we have already seen from the cross-tabulation tables) that respondents from

[34] The chi-square statistics shows the goodness of fit but it does not compare the models (nested models). The latter can only be achieved by using the same N throughout all models.

the professional background are more successful at gaining degree qualifications than their counterparts from managerial and entrepreneurial origins.

Model 2 shows that there are significant direct effects of parental education and parental cultural capital on respondents' chances of getting a degree. It should be noted that even when the effect of parental education is taken into account, parental cultural capital is still statistically significant. Also, the inclusion of the parents' educational attainment and cultural capital factors have reduced the size of the effects of social origins to a considerable extent, indicating that these factors are highly correlated with each other[35]. Although the independent effect of cultural activities is relatively small, it still has a direct net effect on degree attainment. More importantly, the inclusion of parental cultural capital in Model 2 also increases the fit of the model, so it is not just limited to mediating social origin's effect.

In Model 3, three more factors are introduced: school type, the child's after-school activities: 'Art' (drawing and painting), and 'Reading' (writing stories, borrowing books from libraries and reading). It can be readily noted that there is a significant direct effect of the child's after-school 'cultural' activities. While parental cultural capital remains significant, the child's reading and art-related activities in the home environment is shown to be beneficial to their level of education. It can therefore be inferred that a child who takes an active interest in reading books, and writing stories in addition to their home work after school, will perform better academically than a child who does not do these things. One possible explanation could be that the these activities greatly enhance verbal fluency and reading

[35] This is consistent with Bourdieu's findings (Bourdieu, 1977) which shows a close relationship between social class and cultural practice and educational level.

comprehension skills. It could therefore be argued that children who are exposed to a family environment with positive encouragement or role models and easily available books (i.e. if their parents also read a lot) are more likely to develop their intellectual ability to a fuller extent.[36]

Results in this model also suggest that the type of school has a major effect in determining one's chance of getting a degree. Respondents who attended selective school (grammar, independent or direct grant maintained schools) have a much better chance of obtaining degree qualifications than those who went to comprehensive schools. By contrast, those who went to a secondary modern school are much less likely to have survived to degree level. There is a clear advantage for those who attended fee-paying schools as compared to their peers in comprehensive and secondary modern schools. Although a wealthy background is not essential for attending grammar schools, leavers from these schools have a higher chance of obtaining degrees. It is not surprising that they did better than their peers from comprehensive and secondary modern schools, since grammar schools were highly selective and their pupils were prepared for university education following a highly academic syllabus.

The child's general ability at age eleven is introduced in the final model (Model 4), and is shown to have a significant effect on the chance of obtaining a degree. It is however important to note that the cultural activities of both parents and child remain highly significant, even net of social origins and parental education and respondents' ability ratings. This is an important finding as it allows us to distinguish

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[36] The correlation statistics between parents' cultural capital and the respondents' cultural activities is 0.22, but is highly significant at 0.01 confidence level.

the effect of the child's ability from their cultural activities. In other words, even controlling for ability, the cultural activities of the child still make a significant difference.

Having controlled for ability, the effect of selective school (grammar and independent schools) is dramatically reduced. This is to be expected since entry to these schools is based on ability. It has been argued that educational inequalities are due to differences in students' abilities and motivations from different social backgrounds[37] (Saunders 1995). However, Table 3.6 shows that the manual working class students are still noticeably worse off than middle class students even when ability and the child's cultural activities are taken into account, suggesting that class inequalities in higher education cannot be explained adequately by the unequal ability levels of pupils of different social origins.

Thus, evidence from the above analysis suggests a strong relationship between social origins, cultural resources and higher educational achievement. It is clear that students from higher social origins, with better educated and more cultured parents are the most common group to obtain a degree in higher education. The selective school system and the inculcation of cultural activities also played an important role in explaining higher educational success, net of the effects of social origins and parental education. To what extent are these advantages manifested in subject choice in higher education? Do students from lower social origins suffer from restricted choices of subjects? In other words, are their choices circumscribed by their social origins, their earlier educational achievements and their lack of cultural capital? The following

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[37] He argued that the degree of success was determined by the level of ability and motivation. Individuals with middle class backgrounds were more able and hard-working were therefore more likely to succeed.

section will attempt to answer these questions by examining factors affecting subject choice.

Analysing Subject Choice - The NCDS experience

The rest of this chapter devotes to a systematic examination of subject choice in higher education. In addition to the variables used in the analysis in part one, variables giving subject and public examination results including O levels and A levels are also included in the analysis.

For subject groups, information on the subject of highest qualification was recorded in sweep four (variable N6218). The original variable contains a very fine classification of up to 705 different categories, from education and teacher training to architecture, humanities, accounting, earth sciences, fine arts, drama, music, philosophy and so on. These were recoded into nine categories[38]. The nine combined subject areas are:

1. Law and Medicine, Dentistry, Pharmacy
2. Engineering and Technology
3. Science
4. Social Science
5. Accounting, Banking and Insurance; and Administration, Management and Business
6. Humanities: Languages and Arts
7. Creative Arts (Music, Drama and Visual arts)
8. Education
9. Miscellaneous vocational, computing, hotel and catering, institutional management, secretarial studies, agriculture and forestry, etc.

[38] Some seven hundred subjects from variable N6218 are recoded into the nine subjects in the following ways: (10 to 13, 426,427=1) (50 to 285, 519=2) (350 to 411=3) (420 to 425, 428 to 440=4) (441 to 451, 452 to 488, 496 to 516=5) (600 to 657=6) (699 to 705=7) (1 to 7=8) (16 to 47, 301 to 334, 489 to 495, 520 to 583=9).

Information on examination results was obtained in 1978 from the schools which respondents were known to attend at the time of the 1974 follow-up (NCDS3). A composite variable was constructed by combining grades respondents obtained at public examination.[39] Similar procedures were carried out with Advanced Level examination (variable E385)[40] and SCE Higher Level examination[41] (variable E389). Information was extracted from variables E385 and E389 and a combined variable of Advanced level and Scottish Higher level examinations was constructed.[42]

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[39] Grades obtained at CSE - Certificate of Secondary Education (variables E244, E248, E252, E256 and E260), GCE - General Certificate of Education - Ordinary Level (variables E418, E422 and E426) and SCE - Scottish Certificate of Education (variables E373, E377 and E381). I created a common scale which gives points to different grades achieved in each subject in the examination taken: ten points for grade A; seven points for grade B; and five point for grade C at O level and SCE Ordinary level examinations. Similarly, for CSE, five points were given for grade one, four points for grade two, and one point for grade five. These points are added up to create a common score on a continuous scale from zero to 133. The author is aware of the fact that the school and examination systems of Scotland are quite different and therefore are not strictly comparable with the system of England and Wales. This procedure is purely on the ground to maximize the number of cases in the analysis. Still, we should treat the results cautiously because of this.

[40] Information on A level exams was extracted from variable E385 to create variable ALEVEL which contains four levels: 1 '3+ AL and 9+ points', 2 '3+ AL up to 8 points', 3 '2 AL 9+ points', 4 '2 AL up to 8 points', 5 '1 AL pass'. For the Scottish Higher level exam, E389 was recoded into SCEHL in a similar way. These two new variables were combined to create ALSCHL.

[41] Note that the Scottish examination system is slightly different from that of England and Wales, and strictly speaking higher level is not quite equivalent to A level. But in order to maximize the number of cases for those who sat for examinations at similar levels, they are included in this analysis.

42 (1) 3+ A level /SCE-HL and 9 points; (2) 3+ A level /SCE-HL up to 8 points; (3) 2 A level/SCE-HL; (4) 1 A level/SCE-HL.

Social Background and subject choice

Since the primary concern of Bourdieu is inequality in subject choice in higher education, a more restricted sample was selected to study subject choices in this section. This includes only those respondents who obtained degree qualifications[43] or their equivalent.

Table 3.7: Subject Areas by gender in Higher Education (column percentage)

	Men	women	Total %
Law and Medicine, Dentistry, Pharmacy	10.7	6.6	8.8
Engineering and Technology	17.4	1.7	10.2
Science	22.7	13.1	18.3
Social Science	10.2	9.8	10.0
Accounting and Administration	14.6	9.1	12.0
Languages and Arts	8.7	20.8	14.3
Music, Drama and Visual Arts	3.8	5.4	4.5
Education	6.9	24.3	14.9
Miscellaneous vocational, secretarial studies	5.0	9.2	6.9
Column N	674	579	1253
Total %	100	100	100

$X^2 = 206.85$, d. f. = 8, $p < .000$, (N = 1238).

It is well known that some faculties at universities are larger than others as is shown in Table 3.7. While science remains the largest and most popular faculty (perhaps a reflection of more funding from the government), accounting for 18.3 per cent of all the students, there exist a few smaller faculties or departments, such as Medicine, Law, Creative arts. Each of these only constitutes about four per cent of the total before they were combined. As has been found elsewhere (Kelsall, Poole and Kuhn, 1970; Lyon and Murray, 1993), a marked gender difference was found in subject choice. Female students were over-represented in subjects such as Language

[43] The 35 respondents who are reported to have higher degrees are excluded from the analysis since the subject of their first degrees may not be the same as their higher degrees.

and Arts, and Education; whereas male students were much more concentrated in Science and Engineering and Technology.

According to Bourdieu, if the distribution of students among the various faculties depended only on individual 'vocations' and 'tastes', then for a hundred students of a given origin, we should expect to find a distribution of conditional probabilities which, in each social category, purely and simply reflected the different disciplines' share of the total number of students. As was shown in Table 3.1, the level of cultural capital significantly varies between different social origins. The professionals were the richest in cultural capital. The semi-professionals came second and employers and managers only ranked third. This may suggest a difference in their advice to children as to which subject to take at university.

Table 3.8: Social Origins by Subject Choice (column percentage)

	Social Origins				
Subject	employers, managers	professionals	semi-professionals	lower social origins	All
Medicine, Law	9.9	13.4	8.5	6.7	9.2
Engineering, technology	12.0	10.1	10.6	8.5	10.1
Science	16.5	18.9	16.9	20.4	18.5
Social Science	9.0	7.1	13.4	11.0	9.9
Accounting, administration	11.4	10.5	14.8	11.9	11.8
Humanities	16.5	16.0	12.0	12.8	14.4
Creative arts	2.7	5.9	7.7	4.6	4.7
Education	14.1	10.9	11.3	18.1	14.6
vocational	8.1	7.1	4.9	6.0	6.0
Column N	338	239	145	442	1164

$X^2 = 36.15$ d. f. = 24, p = 0.05, (N = 1166).

In order to capture these differences, I shall keep the distinction between different sections within the 'privileged' background, namely employers and

managers, professionals and semi-professional, and social origin is collapsed into four categories[44]. We can see from Table 3.8 the distribution of subject choices of students from different social origins.

Figures in Table 3.8 suggest that a higher percentage of students from more privileged social origins have chosen subjects like Law and Medicine. For instance, 13.4 per cent of students from professional backgrounds have chosen Medicine and Law, whereas all medical and law students account for only 9.2 per cent of the total number of students from all subjects. By contrast, only 6.7 per cent of the students from lower social origins opted for these subjects. Students from lower social origins are more likely to be found in Education, 18.1 per cent of them chose this subject as compared to 10.9 per cent from professional backgrounds and 11.3 per cent from semi-professional backgrounds. If I further collapse father's occupation into a simple binary of 'high' and 'low' social origins (table not reported) an even sharper difference emerges, reaching a chi-square statistics of 19.34, with 8 degrees of freedom and $p = .013$.

Parents' educational level and subject choice are also believed to be closely related to each other. Table 3.9 indicates that the more educated the parents are, the higher the percentage of respondents who choose Medicine and Law. For example, 14.0 per cent of the students whose parents had achieved a high level of education ended up in the medical or law school. In contrast, only 5.9 per cent of those whose parents with secondary or below education did the same. Instead, the more popular

[44] Whilst the first three social origins (employers and managers; professionals and semi-professionals) remain as they were, other social origins from own accounts and farmers to manual workers were combined to form 'lower social origins'.

Table 3.9: Parents' education by subject choice (column percentage)

	Parental Education			
Subject	Tertiary or university	Intermediate level	Secondary or below	All
Medicine, Law	14.0	8.2	5.9	8.6
Engineering, technology	9.1	10.2	10.1	10.0
Science	19.4	17.2	19.9	18.4
Social Science	10.2	8.6	15.1	10.0
Accounting, administration	9.1	12.5	9.2	12.0
Humanities	16.1	14.6	12.6	14.3
Creative arts	7.0	4.5	3.4	4.5
Education	10.8	15.6	17.1	15.2
vocational	4.3	8.4	7.5	6.9
Column N	188	707	358	1253

$X^2 = 28.58$ d. f. = 16, p = 0.027, (N=1253).

To explain this class difference, Bourdieu argues that 'the lower a student's origin, the more his access to higher education had to be paid for by a *restriction of choice*, even to the extent of the more or less compulsory *relegation* of the least favoured categories into Arts and Science' (Bourdieu and Passeron, 1977, p.227).

Whether Bourdieu's hypothesis that the lack of cultural capital of working class students limits their choices of subject in higher education holds true in the British context, formal tests need to be carried out.

The Role of Public Examination

As was highlighted earlier, subject choice may be largely determined by previous academic achievement. It may be that some more job-specific subjects that have strong links with professional organisations have a high standard of entry requirement. At the time, in order to be accepted by these faculties, it was not

have strong links with professional organisations have a high standard of entry requirement. At the time, in order to be accepted by these faculties, it was not uncommon for students to have three or more grade A in their A level exams.[45] To investigate this, we have to look at the examination grades of the students before they entered university. To what extent can the social origin differences in subject choice be explained by grades in public examinations? We first look at the distribution of grades by social origins.

Table 3.10: Social Origins by GCE O-level / CSE / SCEOL grades (row percentage)

	GCE O level / CSE / SCE O level Grades					
Social Origins	71 to 133 points	50 to 70 points	21 to 49 points	1 to 20 points	No passes	Total (N)
employers & managers	9.1	18.8	33.7	29.6	8.9	2008
Professionals	19.7	29.2	32.8	14.2	4.0	725
semi-professionals	9.9	22.5	33.4	26.9	7.3	808
routine non-manual	4.4	14.8	32.0	36.6	12.3	935
own account, farmers	5.0	10.4	28.3	36.6	19.7	817
manual foremen	4.1	9.0	29.4	40.8	16.8	1146
skilled manual	2.5	7.1	22.5	42.0	25.9	3685
semi/unskilled	1.5	5.1	18.4	41.5	33.5	2576
Average percentage	5.3	11.7	26.4	36.5	20.1	12700

$X^2 = 2016.47$ d. f. = 28, $p < 0.000$.

Table 3.10 shows that public examination performance is highly associated with social origins. 9.1 per cent of respondents whose fathers were employers and managers got above 71 points at O level exams. Such a score represents an achievement of obtaining grade A in at least seven O Level or Scottish O Level subjects (ten points for grade A). For students from a professional background, this

[45] This may not be true in the current situation since some professional organisations, particularly Engineering, have lowered their entry requirements recently to attract more young people. This may also be associated with manpower planning due to shortage of graduates in certain areas. See Johnson, 1972; Crompton and Sanderson, 1992 for more details.

figure is the highest, reaching 19.7 per cent and almost half of all the students from professional backgrounds scored 50 points or above. Conversely, less than 7 per cent of students from unskilled working class background achieved this. At the bottom of the scale, nearly 75 per cent of these students scored below 20 points or had no passes at all. However, for the minority group of working class students who did well in their O levels, it seems logical to assume that their chance of surviving to higher education is higher. We can also expect to see a less polarised picture of class difference in A level exam results (See Halsey, Heath and Ridge 1980: 108-109 for a detailed discussion of school attendance and examination).

This may be a levelling effect of the examination system itself. Once the least successful pupils have dropped out, we would expect fewer variations between those who survived the competitive examination system. Those who decided to continue in their educational career and take A level examinations were likely to be those who had good grades in their O level examination and are unlikely to come from the most humble origins. Those who decided not to go on to higher education might have left school at the minimum age and entered the labour market after their CSE or O level examinations. This is readily notable in Table 3.11 due to the massive reduction in the number of cases of pupils for whom there are A level examination results.

As Table 3.11 shows, students from the top three social origins continued to do well, having 30.7 per cent, 38.3 per cent and 31.2 per cent respectively who got three or more A levels and nine or more points. However, students from the bottom two categories - skilled manual workers, semi- or unskilled manual workers - also did reasonably well. 20.4 per cent of the students from semi-skilled and unskilled background got the top grades and 23.7 per cent of the students from origin eight were

found in the same category. At the lower end of the scale, whilst the percentage of the students who got only one A level pass does not vary significantly according to social origins, some of the differences are quite big. For example, only 15.5 per cent of students from professional backgrounds were in this category as compared to 27 per cent of those from manual foremen (27.5 per cent) and skilled manual (27 per cent) backgrounds. In short, the general impression is that A level examination results are highly associated with class origins in favour of the students from more privileged homes.

Table 3.11: Social Origins by GCE A level /SCEHL grades (row percentage)

	GCE A level / Scottish H level grades				
Social Origins	3+ AL/HL 9+ points	3+ AL/HL up to 8 points	2 AL/HL 9+ points	1 AL/ HL	Row N
1.employers & managers	30.7	22.9	27.3	19.2	590
2.professionals	38.3	24.4	21.8	15.5	381
3.semi-professionals	31.2	27.1	25.6	16.2	266
4.routine non-manual	19.0	34.5	24.7	21.8	174
5.Own account, farmers	22.0	17.8	37.3	22.9	118
6.manual foremen	20.8	21.7	30.3	27.5	120
7.skilled manual	20.4	25.2	27.4	27.0	318
8.semi/unskilled	23.7	23.1	29.5	23.7	156
Column N	596	523	568	436	2123

X^2 =72.478 d. f. = 21, $p < 0.000$.

If it is true that some subjects at universities require higher public examination grades for entrance, better results enable students to have wider choices. Then the class difference in subject choice perhaps could be explained by the better performance of students from the more privileged origins. Similarly, better educated parents may be more helpful to their children in making more 'informed' choices,

assuming that they are more knowledgeable of the educational system as suggested by Halsey, Heath and Ridge (Halsey *et al.*, 1980).[46]

Although we can still see an over-representation of students from privileged origins in Law and Medicine faculties (as shown in Table 3.8), in a sense, these results may still not support Bourdieu's argument of 'the social specialisation of faculty'. Rather these may be results of better academic records achieved by students from more privileged social background, thus enabling them to choose the 'elite' subjects in the university. This can be further investigated by looking at the distribution of A level grade and degree subject of the cohort members.

Table 3.12: A level grades by subject choice (column percentage)

	A level Grades				
Subject	1 AL / HL	2 AL /HL	3+ AL / HL up to 8 points	3+ AL / HL & 9 points	Average percentage
Medicine, Law	1.7	3.7	9.0	15.0	9.7
Engineering, technology	5.0	10.2	11.9	9.3	9.9
Science	18.3	18.4	21.7	19.3	19.6
Social Science	5.0	11.8	9.4	9.0	9.6
Accounting, administration	10.0	8.6	14.8	11.5	11.5
Humanities	1.7	11.0	10.2	22.0	14.9
Creative arts	18.3	4.1	2.5	2.0	3.7
Education	33.3	25.3	12.7	6.3	14.5
vocational	6.7	6.9	7.8	5.8	6.6
Column N	60	245	244	400	100

$X^2 = 155.61$ d. f. = 24, p = 0.000 (N = 949).

Results from Table 3.12 above suggest that among the students who achieved top grades (three or more A levels and over nine points), 15 per cent of them had

[46] Halsey *et al.* suggested that because the better educated parents had been through the educational system themselves, i.e. they went to university, they could draw on their experience to help their children.

chosen Medicine and Law, compared to the 1.7 per cent of those who achieved poor grades. Among all 'high achievers', 22 per cent of them had opted for Humanities, compared to only 1.7 per cent of those who got only 1 A level pass. On the contrary, a higher percentage of students with less good A level results chose subjects such as Education, Science and Creative Arts. Again, evidence suggests that 'elite' faculties are highly associated with 'good' grades.

In short, the bivariate analysis established that not only are social origins and cultural capital strongly related to subject choice, but more meritocratic factors such as public examination results may also account for differences in subject choice. However, how much of this effect is in fact related to more privileged backgrounds and better secondary education? We have to resort to formal hypotheses testing in the next section.

Modelling Subject Choice

The above cross-tabulation results highlight important differences in social background for students who chose Education, Medicine and Law. A higher proportion of students from higher social origins had chosen Medicine and Law while students from working class backgrounds were somewhat more likely to have an Education degree. Parental education and public examination results are also shown to be closely related to the subjects read in higher education. To test Bourdieu's hypothesis on the 'social specialisation of faculties', I pose the following questions: to what extent are subject choices of working class students influenced by their social origin? How far is class difference in subject choice explained by the influence of

cultural capital? To what extent is this 'social specialisation' of faculties linked to different types of secondary education?

The next step is to test these hypotheses formally by a series of logistic regressions. Due to their strong link with 'elite' professions, subjects such as Medicine and Law are recoded as 'elite subjects'. Education and vocational subjects are recoded as 'low prestige subjects'. The remaining seven subjects are recoded to the 'middle category'. Two sets of logistic regression models[47] are run to examine the association between social origins, gender, parental education, parental cultural resources, school type and subject choice. The response variable in the first set of models is a dichotomy of 'elite' subjects (1) and middle category subjects (0). For the second set of models it is a dichotomy of 'elite' subjects (1) and low prestige subjects (0).

Also, in all models, social origins as measured by father's occupation are collapsed from eight categories to a dummy variable. The top three origins (employers and managers, professionals and semi-professionals) are recoded into 'father in high social origins' (1) and the remaining categories are recoded into 'father in all lower origins' (0). Measures of parental education, parental cultural resources and child's cultural activities in art and reading remain the same as in the analysis in part one. The variable of general ability of the child at age eleven is replaced by public examination results since public examination results are essentially academic achievement records which are actually available to different faculties in the selection of students while scores on a general ability test are not usually available to selectors.

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[47] An alternative way is to use multinomial logit models comparing all three combined subject groups. However, the results would be exactly the same with the only difference of presentation. For the sake of simplicity, ordinary logistic regression will be used here.

First, I look at the contrast between Medicine and Law faculties and the 'middle subjects' from Table 3.13. The results lend some support to Bourdieu's hypothesis of 'specialisation of faculties'. Students from more privileged backgrounds are significantly more likely to study Medicine and Law than other subjects. In Model 2, after introducing parental education and parental cultural capital, the effect of social origin becomes insignificant. Although parental cultural capital does not reach statistical significance, parental education is found to have a significant effect. This suggests that parental education does explain the class difference in subject choice. Results in Model 3 with the inclusion of the child's cultural activities at home - art and reading - do not reach any statistical significance either. Thus, the class difference in subject choice may not be a result of the different levels of parental cultural capital or children's cultural activities as Bourdieu has suggested. The effect of gender is insignificant and hence was removed together with parental cultural resources and child's cultural activities from the later models. The effect of parental education is reduced in Model 3 and becomes marginally insignificant after the child's cultural activities are introduced in the model, indicating that it has an indirect effect on subject choice.

Table 3.13: Logistic regression on subject choice (Elite vs. middle category)

	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	**-2.34 (.19)**	**-2.78 (.47)**	**-2.55 (.76)**	**-2.38 (.28)**	**-4.33 (.61)**
Social Origins (base: low social origins)					
High Social origins	**.58 (.22)**	.03 (.92)	.12 (.31)	.12 (.25)	
Gender	-.27 (.21)				
Parents' cultural capital		.01 (.05)	.01 (.05)		
Parental education		**.11 (.05)**	.08 (.05)	.07 (.04)	
Child's cultural activities:					
art			-.08 (.13)		
reading			-.01 (.09)		
O level results					.01 (.01)
A level results					**.52 (.15)**
School type (base: comprehensive)					
grammar				.25 (.27)	.04 (.30)
secondary modern				.10 (.55)	.06 (.64)
Direct Grant/ Independent				**.94 (.27)**	**.89 (.27)**
Chi-square statistics (degrees of freedom)	8.36 (2)	7.69 (3)	4.91 (5)	20.93 (5)	32.66 (5)
N	967	760	666	908	748

Standard errors are given in parenthesis and significant parameters are shown in bold.

The introduction of school type in Model 4 is shown to have a direct effect on subject choice. Students who went to direct grant or independent schools were much more likely to enter Medicine and Law faculties, suggesting a strong link between private education and some 'elite' subjects in higher education.

As expected, results of A level examination are highly significant in getting into Medicine and Law faculties. This again confirms the findings of the cross-tabulations (Table 3.12) that a high proportion of students in Medicine and Law faculties obtained the best A level results. This may not come as a surprise as A level results are included in the model since the two are highly correlated with each other. Perhaps the most interesting result is the school effect. Whilst students from direct grant or independent schools are significantly more likely to study Medicine and Law, as compared to the middle category subjects, even controlling for A level results (see

Model 5), those coming from grammar schools do not enjoy the same 'privilege'. In sum, private selective secondary education and good examination records very substantially increase the chance of getting in 'elite' faculties such as Law and Medicine as opposed to the 'middle category' subjects.

For the difference between 'elite subjects' and 'low prestige subjects', Table 3.14 shows a very similar picture except for the remarkable gender difference found. Being a female, the chance of studying Medicine and Law is significantly reduced as compared to studying Education or other vocational subjects. Again, as shown in Model 1, with a privileged social background, one has a higher chance to study these 'elite' subjects, although this effect becomes insignificant after controlling for other factors. However, parents' cultural capital does not reach statistical significance (see Model 2). Controlling for childhood cultural activities in Model 3 does not bring any improvement to the model. Again, neither parents' nor the child's cultural activities makes any difference in accessing elite subjects in higher education. Thus, both variables are removed in the later models.

In contrast, parental education is found to be significant. The results suggest that the longer their parents stayed in full time education, the higher the chance they have of getting into the 'elite' faculties as opposed to Education and vocational training. Similar to the findings in Table 3.13, direct grant and independent schools (Model 4 and 5) has a massive positive effect on entering 'elite' faculties. The results in Model 5 indicate a small but significant effect of O level exam results. Again, A level results are shown to have a huge effect, controlling for the other parameters. Social origin was removed at this stage to obtain a more parsimonious model, which achieves a better fit to the data.

Table 3.14: Logistic regression on subject choice (Elite vs. low prestige subjects)

	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	**-.60 (.23)**	-1.10 (.57)	-1.22 (.88)	**-1.25 (.34)**	**-5.76 (.93)**
Social Origins (base: low social origins)					
High social origins	**.79 (.26)**	.35 (.32)	.55 (.34)	.33 (.30)	
Gender	**-1.50 (.24)**	**-.1.48 (.28)**	**-14.1 (.32)**	**-1.45 (.26)**	**-1.88 (.35)**
Parents' cultural capital		.01 (.06)	.03 (.06)		
Parental education	**.14 (.06)**	.10 (.07)	.10 (.06)		**.15 (.07)**
Respondents' cultural activities:					
art		-.19 (.14)			
reading		.07 (.12)			
O-level results					**.02 (.01)**
A level results					**1.17 (.22)**
School type (base: comprehensive)					
grammar				.18 (.31)	-.12 (.39)
secondary modern				.52 (.66)	.53 (.96)
direct grant/ independent				**1.37 (.35)**	**1.72 (.45)**
Chi-square statistics	51.75	42.35	33.32	65.66	119.42
(degrees of freedom)	(2)	(3)	(6)	(6)	(7)
N	380	294	255	358	278

Standard errors are given in parenthesis and significant parameters are shown in bold.

Although these findings tend to support Bourdieu's argument of the close relationship between the 'social specialisation' of the faculties and secondary education, cultural capital does not explain this link. Evidence from the above modelling exercise suggests that students from independent or direct grant maintained school are much more likely to be 'channelled' to Medicine and Law faculties. If selection of students is based on merit and previous academic performance, students with good A level or Scottish Higher Level grades should have an equal chance of entering more demanding subjects such as Medicine and Law, regardless of the type of schools they attended. The evidence revealed so far suggests that this is not the case. We might not expect to see students from secondary modern schools having a strong chance of entering these faculties. However, a grammar school background did

not increase the chance of entering these 'elite' faculties even with good public examination results.

Summary and Discussion

In this chapter I have demonstrated that inequalities in higher education have more than one dimension: first, the *level* of attainment; and second, the access to certain *subject* areas. The key question is what subjects student study once access to higher education is obtained. The evidence presented shows a clear and strong relationship between social origins, parental education, parental cultural resources and higher educational attainment. Cultural backgrounds including parental cultural capital and respondents' own cultural activities both have positive direct independent effects on the chance of obtaining a degree. However, in the case of subject choice, the influence of both social and cultural backgrounds seems to be mediated by public examination performance and school type.

The type of secondary school attended is shown to be one of the most important factors in affecting the subjects studied. This result lends support to Bourdieu's theory of the 'social specialisation' of faculties at university. For the first time, empirical evidence is provided to show the direct link between the type of secondary school attended and subject studied in higher education. However, Bourdieu's theory of cultural capital in affecting subject choice in higher education receives little support.

The relationship between social origins, cultural capital and subject choice is not a straightforward one. The effects of social origins seem to be mediated by private secondary school type and public examination performance. At a glance, access to

'elite' subjects appears to be fairly meritocratic as can be seen by the strong effects of results of A level examination. However, for students with the same exam results, those from privileged secondary school has still maintain an overall advantage over their peers from state schools. We know from the bivariate analysis (Table 3.11) that these good exam records are highly associated with privileged backgrounds and private schools are only attended by the privileged few. Whilst class origin is highly associated with public examination success, cultural capital and exam performance are fairly independent.[48] Thus it can be concluded that the privileged class have joined the credential society by ensuring that their children have good primary and secondary education.

Regarding gender difference, women seem to be concentrated in subjects such as Education and vocational training. This result is in line with the findings of both Brennan and Kelsall where women are much more likely to be attracted to the teaching profession than men. However, when compared with the 'middle category' subjects, there is no evidence to suggest that women are penalised in their chance of accessing 'elite' subjects like Medicine and Law.

It is important to stress that Bourdieu actually recognised the role of economic capital in status inheritance. It is evident that only wealthy parents from the privileged class can afford to invest in private secondary education for their children (except for direct grant schools). However, although cultural capital constitutes an independent factor in explaining higher educational success, its effect on subject choice in higher education is somewhat exaggerated. It has neither a direct or indirect effect on subject

[48] It was found from an earlier test (not reported) that parental cultural capital does not have a significant effect on exam results.

choice. But we should also remember that those who obtained degree qualifications do come from families with higher levels of cultural capital. Also due to the relatively small number included in the analysis, it is more difficult to see a significant difference in the effect of social class and particularly of cultural capital.

To conclude, the NCDS cohort experience only lends support to part of Bourdieu's cultural capital thesis about the unequal access to higher education. For subject choice, there is evidence of the 'social specialisation' of faculties in which private secondary education has a strong link with 'elite' faculties at university. Thus, it can be concluded that working class students do 'pay' for their higher education with limited choices of subject areas, a disadvantage circumscribed by their social origins.

Chapter Four

Subject Specialisation and First Job Attainment

In the last chapter I explored the effects of social class, parental education and cultural background on obtaining a degree and on subject choice in higher education. The results suggest that the influence of social class on degree subject choice infiltrates via the school types. Students from privileged class backgrounds who attended private selection schools were found to be more likely to read Law and Medicine whilst relatively more working class students who mostly attended state schools chose to do a degree in Education. For other subjects, there does not seem to be any clear pattern of class difference. Other aspects of social background such as parental educational level also showed a significant impact on degree subject choice.

This chapter extends the examination of degree subject choice to its influence on first job attainment. As I have discussed in the introduction, the conventional approach to meritocracy has largely focused on the association between the level of qualification obtained and occupational attainment. Most scholars found that higher levels of qualifications led to higher occupational attainment (Heath; 1981;Treiman and Ganzeboom, 1990; De Graaf and Ganzeboom, 1990; Heath, Mills and Roberts, 1992; Ishida, Muller and Ridge, 1995). Although having a degree is in general beneficial to occupational attainment, the influence of degree subjects studied on occupational outcomes is not dealt with in most previous research. The key questions this chapter will address are: First, when the level of qualification achieved is the same, is it easier for graduates in certain subject areas to get jobs than others? Second, for graduates who are in work, is there any difference in the level of jobs they get? In other words, do some subjects lead to higher level jobs than others? Although the

focus of this chapter is on the first job attainment of graduates, the attainment of respondents with other qualification levels will also be reported in the bivariate analyses to serve as comparisons.

Higher Education and Occupation

The positive relationship between education and occupation has been widely documented (Blau and Duncan, 1967, Treiman, 1970; Heath, 1981; Treiman and Ganzeboom, 1990; Heath et al., 1992, Kerckhoff, 1993; Marshall et al., 1997). Graduates with degree education are expected to get higher occupational attainment. It is believed that graduate skills ranging from numeracy to motivation to work are relevant to the requirements of employment (Bradshaw, 1985). In his paper on transferable intellectual and personal skills, Bradshaw argued:

> Possession of a degree indicates ability to think at a certain level, but is insufficient. Selection criteria, advertisements and training courses run to make graduates fully effective show that employers need skills in communication, co-operation and teamwork, and positive personal qualities such as the will to set and meet objectives and to be innovative. Although there is no complete and generally accepted classification of generic intellectual and personal skills, at least some are identifiable and are developed in the process of higher education (Bradshaw, 1985: 201).

Bradshaw believed that transferable intellectual skills and personal qualities involving communication, quantification, analytic and synthesising skills are more important to employers than vocational skills (Bradshaw, 1985:201). Assuming graduates across different subject areas would have acquired, though to a different extent, these intellectual and personal skills, we may expect little difference in the occupational attainment of graduates from different subject areas.

The association between higher education and occupation can be distinguished into two main polar types. The first type of association, it was suggested, may be exemplified by the recruitment of university graduates to the higher civil service (Cotgrove, 1962: 33). In these occupations, the knowledge required and tested by means of examinations is not necessarily used in the performance of administrative functions. It is assumed that the students at the top would be superior whatever the subjects studied. The achievement of academic honours indicates the possession of necessary abilities, aptitudes and personal qualities, and predicates the probable achievement of success in the chosen vocation[1] (Cotgrove, 1962).

Conversely, there are occupations that require the application of specialised knowledge, such as Law and Medicine. In these professions, one has to acquire highly specialised professional knowledge and skills, which can be directly applied to the practice of the profession. Students of these disciplines have to pass a series of examinations to reach the professional standard and prove that they are competent to practice (Cotgrove, 1962).

In addition to the background factors such as social and cultural origins, graduates' employment and occupational attainment are influenced by at least three sets of factors. First, there are educational factors such as students' occupational aspirations and subject specialisation. Second, labour market conditions and sectoral differences. Third, there is the nature of the relationship between degree subjects and

[1] However, other researchers believed that students with Arts degree acquire few skills specific to any occupations, with the possible exception of teaching (Kelsall *et al.*, 1972: 68), which may explain their lower occupational attainment.

the labour market, and institutional factors such as the type of institutions where degrees are obtained.

Occupational Aspiration

Past research has indicated that not all students enter university with a particular career in mind. In some cases, however, occupational choice may take place before choosing the appropriate university education and examinations. The most notable examples are students who decided to follow a career in the medical or engineering field (Cotgrove, 1962; Kelsall *et al.*, 1972; Brennan *et al.*, 1993). Naturally, these students have to choose the appropriate subjects, i.e. Medicine or Engineering, as their degree subject in order to gain the qualifications required to practice. Thus, it is plausible that those who already have some occupational preference will find it easier to get a job following graduation since the decision has been made. Others may still be deciding what to do and it may therefore be more difficult (or it may at least take longer) for them to find suitable work.

It may be true that some undergraduates delay making a firm commitment to a particular kind of job for as long as possible. Nevertheless, Kelsall and his colleagues found some link between occupational preferences and degree subject choice. Male students who studied Arts subjects were found to have a particular preference for school teaching; Social Scientists were far more interested in some other form of professional employment, whilst Scientists and Technologists were more likely to opt for non-university research, development and production (Kelsall *et al.*, 1972: 69). Both higher education and the labour market have of course undergone many changes since the 1960's, and the pattern described by Kelsall and his colleagues may no

longer be true today. Nevertheless, the argument that male students have stronger career orientations towards higher education in comparison to female students is supported by the findings of Brennan and his colleagues in their recent research (1993). They identified several types of students, and women and mature students were reported to express a more 'altruistic' or 'inner-directed' orientation than a 'careerist' approach towards higher education. They also argued that women were less guided by financial and status rewards in their approach to education than men (Brennan *et al.*, 1993). Hence, these differences in orientations by gender may have different implications on men and women's occupational attainment.

Subject Specialisation and its labour market implications

It is believed that graduates in less specific disciplines will be less limited in the range of jobs they can apply for (Witte and Kalleberg, 1995). Research in Britain, however, has suggested that graduates of specific disciplines (with specific knowledge and skills) found it easier to get a job than those who were only eligible for vacancies open to graduates of any discipline (Brennan *et al.*, 1993). Brennan *et al.* argued that although graduates with a general degree could apply for a wide range of jobs, they had to face much fiercer competition since a great number of other graduates who were in similar situations were also eligible to apply. It was found that subjects like Engineering, Computing, Business and Accounting were the ones with above average employment rates shortly after graduation (Meadows and Cox, 1987). Some

graduates, especially those with general, non-job specific degrees may choose to further their qualifications after obtaining their first degrees.[2]

To explain why it is easier for some graduates to get jobs than others, researchers have suggested that graduate employment is highly dependent on the subject/labour market relationship (Silver and Brennan, 1988). Silver and Brennan (1988), in their study of vocationalism in higher education, developed a model to describe the relationship between subjects in higher education and the labour market. They distinguished subjects with a specific subject/employment relationship from those with diffuse links[3]. Degree subjects with a specific subject/employment relationship included Medicine, Pharmacy, Engineering, Accountancy and Law. According to Silver and Brennan, 'entry to a specific field of employment is regulated by a specified degree qualification and numbers in training are controlled effectively and matched to employers' demand' (Silver and Brennan, 1988: 37). In this case, a specified degree itself becomes a 'license to practice'. It has also been argued that this vocational/ professional relevance is likely to have its greatest impact upon entry into the labour market (Witte and Kalleberg, 1995).[4]

In contrast, graduates in subjects with a diffuse link with the labour market 'enter an open labour market which is not fixed in their favour by professional bodies or by statutory control mechanisms' (Silver and Brennan, 1988: 48). Silver and Brennan argued that employment outcomes of these degree subjects are 'potentially

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[2] Kelsall *et al.* found that Arts graduates were most likely to engage in further full-time study (1970: 16).

[3] Similar interpretation of the relationship between subject of study and employment is also found in Dolton and Makepeace (1992) where they also examined the question of how job specific a given degree subject is (Dolton and Makepeace, 1992: 25).

[4] However, the effects of vocational relevance will weaken over time, as age, training, and resources acquired on the job increase.

diffuse and indeterminate' (Silver and Brennan, 1988). They believed that much of the higher education provision was to be found in subjects with diffuse links with the labour market. These subjects include Humanities and Pure Science, Social Science, Business Studies and Public Administration.[5]

Most graduates in subjects with a specific subject/employment relationship are expected to have little problem in finding work since they are entering a highly specific section of the labour market where supply is strictly regulated by professional bodies. On the other hand, general degrees which have only a diffuse relationship with the labour market allow graduates to bring only one attribute (the degree itself) into the labour market, which is not a 'particularly strong currency in its own right' (Lyon and Murray, 1993: 208). The role of some vocationally relevant skills such as numeracy may be expected to increase when the competition in the labour market is great. Graduates in arts and humanities, especially women, may subsequently be penalised by the shortage of vocationally relevant skills. Lyon and Murray believed a greater extent of under-employment and over-qualification can be found in people who have studied these subjects. In fact, graduates from non-numerate subjects were reported to find it difficult to get jobs, and tended to remain unemployed for longer periods of time than other graduates (Brennan and McGeevor, 1987; Boys and Kirkland 1988; Lyon and Murray, 1993). According to Brennan and McGeevor, in 1983, graduates with degrees in arts and humanities were found to suffer most from unemployment whilst over eighty per cent of those with business and management

[5] Although these subjects have a diffuse link with the labour market or have no explicit preparation for a specific occupational role, Silver and Brennan argue that it would be a mistake to regard these subjects as non-vocational. In contrast, they offer quantitative, commercial, administrative and communicative skills (Silver and Brennan, 1988: 48).

degrees were in full-time employment.[6] Over half of the Social Science, arts and humanities graduates also experienced difficulty in getting jobs appropriate to their qualifications (Brennan and McGeevor, 1988: 20).

Vocational or professional studies with a more specific relationship with the labour market (i.e. which lead directly into specific employment fields) are expected to yield higher occupational attainment (Brennan *et al.*, 1993). Thus, it is natural for medical and law students to become doctors and lawyers. Therefore, we expect graduates will benefit higher job attainment when their occupations match their training. However, Witte and Kalleberg (1995) believed that if the acquired skills and credentials prepare individuals for a wide variety of employment situations, there would be less pressure for them to find work that exactly fits their training (Witte and Kalleberg, 1995: 299). In contrast, if the credentials and skills acquired through vocational education are only relevant to a narrow range of employment situations, finding work that fits one's training is crucial. So for graduates who could not find work that matches their professional or vocational education, especially in the midst of unfavourable labour market conditions, they may suffer from a lower level of occupational attainment.

The change of occupational plan may also affect whether graduates enter jobs that match their training. For instance, a graduate with an engineering degree may decide to work in a bank or to teach instead of becoming an engineer on graduation.

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[6] Not all graduates enter full-time employment on graduation. For those who were not in work for various reasons, further study may be an alternative. More scientists took further study than entered employment on graduating (Kelsall *et al.*, 1970). Further studies may provide an alternative to unemployment when no suitable work is available. Graduates with a non job-specific degree may also delay employment and seek further training in a more vocationally oriented subject. Recent evidence suggested that graduates with non-vocational degrees were more likely to obtain a further qualification in a different subject than graduates with vocational degrees (Dale and Egerton, 1997).

This of course is highly dependent on the labour market conditions and the availability of suitable or related jobs. As was mentioned in the last section, occupational choice is also closely related to the graduates' own orientations and career aspirations and these could change throughout the course of the three years' degree education. Graduates working in an unrelated field for whatever reasons could be seen as wasting their training. It is likely that these graduates would have to start from lower level jobs in order to learn the relevant skills and knowledge on the job.

Because, as Witte and Kalleberg argued, it is crucial for graduates with job-specific degrees to get work that matches their training, those who did not manage to do so could suffer substantial disadvantage in their occupational attainment.[7] Thus graduates who get jobs in a related field are expected to gain higher occupational attainment than those who enter fields of occupations unrelated to their studies. This is an issue which I shall return to in the multivariate analysis later in this chapter.

Industrial Sector

As was noted earlier, research has suggested that graduates with Humanities degrees are more likely to work in the public sector (Cotgrove, 1962). The growth and decline of certain sectors in the labour market is believed to be another major factor which has direct influence on graduates' employment. This may imply that graduates with less job-specific degrees would suffer as a result of the decline of the public sectors. Research has reported that the biggest increase in the number of graduates entering employment has been in the service sector of distributive, business and

[7] Research in Germany suggested that only half of all Germans have jobs that match their vocational or professional education (Witte and Kalleberg, 1995).

leisure services (excluding public sectors and transport) (Brennan *et al.*, 1993). On the other hand, the decline in the school population has led to a sharp fall in the demand for teachers. This has had serious implications for graduates with Humanities degrees who are traditionally recruited in large numbers into the teaching profession (Brennan *et al.*, 1993).

The public sector's share of the total work force in employment has continued to decline since 1979, and fell from 29.4 per cent to 24.5 per cent between 1982 and 1988 (Fleming, 1988). As observed by Brennan and his colleagues, this decline in the public sector was expected to have a direct effect on the employment opportunities of graduates from courses traditionally serving the public sector, such as courses in the Humanities. The trend towards the contraction of the public sector was predicted to continue into the 1990s (Fleming, 1988). Researchers have also reported that some sectors such as finance recruit nearly half of their new employees from numerically-based disciplines (Mathematics, Business and Management Studies, Economics and Accounting) whilst the proportion of arts graduates entering this sector is on the decline (Brennan *et al.*, 1993). Such preliminary evidence points to a need for investigation of sectoral difference in the labour market - an issue I shall deal with in the next chapter.

We have seen from the analysis in Chapter Three that female students are more likely to study Education rather than Medicine or Law. Subject specialisation may result in differential occupational outcomes. Some researchers attributed the cause of occupational segregation by sex to the different subject choices made by men

and women (Dolton and Makepeace, 1992: 22)[8]. We may expect to see relatively less gender segregation in the graduates' labour market since graduates have achieved qualifications at the same level. However, Brennan and his colleagues maintained that the graduate labour market is no less 'segmented' than the overall labour market.[9] They argued that 'the resilience of a "dual labour market" differentiating men and women continues to gravitate male and female graduates towards a certain range of graduate jobs' (Brennan *et al.*, 1993: 48). Along similar lines, Dale and Egerton (1997) found that highly educated women with a degree level qualification were slightly more likely than men to be under-achieving in terms of their occupation (Dale and Egerton, 1997).

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[8] It is widely recognised that the labour market is both horizontally and vertically highly segregated along gender lines (Hakim, 1979, 1992; Dale, 1985, 1987; Dex, 1988; Blackburn, Jarman and Siltanen, 1993).

[9] Although Brennan and his colleagues borrowed the concepts of a 'segmented' labour market and the 'dual labour market' in their book to explain the differential occupational outcomes of male and female graduates, such concepts were loosely defined and little discussion was provided to explain these terms in their context. The segmentation theory (See Doeringer and Piore (1971)) of labour market has been extended to the graduate labour market where researchers have sought to explain the differential occupational outcomes of male and female graduates.
Loveridge and Mok have further distinguished the primary labour market into two sub-segments: 'primary internal' and 'primary external' segments (Loveridge and Mok, 1980). Jobs in the primary internal labour market are regarded as well paid, skill-specific, need training and have good promotion prospects and employment security; whereas jobs which are less skill-specific, with less material rewards, job autonomy and security are classified into the primary external labour market. These jobs are largely white-collar jobs that lost their skill contents and promotion opportunities as a result of structural changes in organisations and technology (Loveridge and Mok, 1980: 395).
According to Lyon and Murray (1993), it is in this primary external labour market where highly educated graduate workers, especially female graduates and graduates with degrees in Humanities are found. The fact that these white collar jobs which are low in skills content as well as income and career prospect are taken by graduate workers is seen as a form of under-employment or over-qualification (Smith, 1986, Tarsh, 1987). An important difference has also been identified between men and women graduates within each subject area in terms of labour market outcomes. Such a phenomenon has been known as 'in-market segmentation'. With the exception of engineering, women's salaries were found to be consistently lower across subject areas than those of men, with the largest difference in arts and humanities (Lyon and Murray, 1993: 219).

Type of Institution

The type of educational institution may also affect graduates' employment. It has been argued that the higher education system in Britain is a binary system consisting of the university sector, and the Polytechnic and college sector (Brennan *et al.*, 1993). This is described as a 'stratified system' of higher education where employers favour university graduates on the assumption that they possess certain qualities such as more general social, personal and intellectual skills (Brennan *et al.*, 1993). Past studies have shown that employers have a preference for university graduates rather than graduates from polytechnics and further education colleges (Boys and Kirkland, 1988), and unemployment affects polytechnic graduates more than university graduates across all subject groups (Weale, 1992). This may partly be determined by A level examination results since non-university graduates usually have a lower performance in A level examination than university graduates. Thus some argue that the possession of a vocationally more relevant degree is not necessarily seen to offset the absence of university qualifications (Roizen and Jepson, 1985).

Getting a job or facing unemployment?

Not all graduates got a job as soon as they finished their degrees. One of the major factors affecting the chances of graduates of the NCDS cohort in getting jobs was the recession in the late 1970s and early 1980s. The unemployment rate reached its peak in 1982.[10]

[10] Apart from the recession, researchers have attributed the cause of the acute unemployment problems for both graduates and other employees at large to the soaring of the working population during this period due to a combination of a high level of 'entries' and a low level of 'exits' in the labour market (Brennan *et al.*, 1993).

The newly graduated NCDS cohort members were greeted by one of the most unfavourable labour market conditions. Figures show that between 1975 and 1985 there was a dramatic growth in the number of graduates entering the labour market, with an increase of 26 per cent for university graduates and 154 per cent for polytechnic graduates (Brennan *et al.*, 1993: 52). In the midst of recession where demand for labour including graduates was low, fresh graduates were likely to face much fiercer competition for work. As I noted earlier, the decline of the school population and the contraction of the public sector had also contributed to graduate unemployment. Most graduates of the NCDS cohort completed their degree education in 1979, at the age of twenty-one, two years before the NCDS4 survey was carried out. These graduates began to enter the labour market in 1979. By 1981, most of the graduates in the sample had completed their degrees and started their first jobs. Only a small proportion of them was still in full time education at the time of the survey (78 males and 39 females). A few graduates were out of the labour force due to permanent sickness or disabilities or looking after the home, and this was true for both male and female graduates.

The overall unemployment rate in Britain was 5.4 per cent in 1979 and rose to 10.5 per cent in 1981. As has been discussed elsewhere (Heath and Cheung, 1996), the more qualified school leavers, in this instance graduates, were more seriously affected than anybody else (in the NCDS) as new entrants to the labour markets have higher rates of unemployment. Despite being highly educated, getting a job may not be as

easy as one might expect. Tables 4.1.1 and 4.1.2 compare the details of graduates' and other cohort members' economic activity in 1981.[11]

Table 4.1.1 Qualifications and economic activity in 1981 - men (row percentages)

	Economic Activity				
Qualification	in paid work	unemployed	full-time education	economic inactive	N
Degree or equivalent	73.7	10.8	11.7	3.8	676
Post A level or equivalent	89.5	5.3	4.2	1.0	505
A level or equivalent	86.6	5.8	6.4	1.2	1370
O-level or equivalent	87.6	10.4	0.6	1.4	1754
CSE or equivalent	83.7	15.0	0.4	0.9	931
No qualifications	72.0	23.5	0	4.5	1014
Total	82.9	11.9	3.2	2.0	6250

Chi-square = 557.8, d. f. = 15, $p < .000$

The overall unemployment rate of the NCDS cohort was 11.9 per cent for men and 7 per cent for women. As we would expect, men had higher rates of unemployment than women at all levels of qualifications. When comparing the figures of the unemployed graduates (for both men and women) with the total unemployed, graduates had lower than average unemployment rates. However, if we compare the graduates with those who had A level and post A level qualifications or their equivalent, they suffered from a much higher rate of unemployment. This may be due to the vocational nature of most A level equivalent (HNC, HND), and post A level (teaching and nursing) qualifications. Moreover, those who obtained A level or equivalent technical qualifications and those who obtained further education would

[11] Economic activity in 1981 is used here instead of the economic activity upon graduation to avoid the problem of changing unemployment rate over time. However, it still leaves the problem of different length of labour market experience.

have completed their full-time education at an earlier age of 18 or 19. They would have entered the labour market between 1976 and 1977 when the unemployment rate was below six per cent. It can therefore by argued that once they were in employment, they were less likely to be hit by the worsening unemployment as compared to new entrants to the labour market.

Table 4.1.2 Qualifications and economic activity in 1981 (women)

	Economic Activity				
Qualification	in paid work	unemployed	full-time education	economic inactive	N
Degree or equivalent	79.4	8.0	6.8	5.9	577
Post A level or equivalent	84.4	3.5	1.3	10.8	546
A level or equivalent	78.0	3.9	7.2	10.9	691
O-level or equivalent	68.3	5.9	0.3	25.5	2302
CSE or equivalent	54.5	8.3	0.1	37.1	1093
No qualifications	38.5	11.1	0.1	50.3	1047
Total	64.4	7.0	1.7	27.0	6256

Chi-square = 1005.1, d. f. = 15, $p < .000$

As we have seen from the above tables, graduates who entered the labour market during the period of 1979 to 1981 were heavily penalised by the adverse labour market conditions due to the recession. The next question is: does the rate of unemployment differ depending on the subject of degree? Tables 4.2.1 and 4.2.2 give the figures.

Table 4.2.1: Degree Subject and Economic Activity in 1981 - male graduates (row percentage)

Degree Subjects	Economic Activity				
	Full-time education	employed	unemployed	economic inactive	N
Law Medicine	14.1	71.8	8.5	5.6	71
Engineering	7.9	78.9	9.6	3.5	114
Science	18.0*	68.0	13.3	0.7	150
Social Science	7.4	77.9	13.2	1.5	68
Accounting and Administration	3.1**	86.6	8.2	2.1	97
Humanities	14.3	62.5	14.3	8.9*	56
Creative Arts	4.0	44.0	36.0*	16.0*	25
Education	17.4	76.1	4.3	2.2	46
Vocational Studies	21.2	69.7	9.1	0	33
Total	11.8	73.3	11.5	3.3	660

$X^2 = 69.0$, d. f. = 24, $p < .0001$; * denotes standardised residuals exceeding 2; ** denotes standardised residuals exceeding -2.

Again, we can see from these tables that male graduates had higher rates of unemployment than their female counterparts, reaching an average percentage of 11.5 per cent as compared to 8.6 per cent of female graduates. However, there is much variation between degree subjects. Figures in the two tables provide some empirical support for the distinction between diffuse/specific relationships that degree subjects have with the labour market. Graduates with degrees with a more specific relationship with the labour market such as Law, Medicine, Engineering and Technology, Accounting, Administration and Management, Education and Vocational Studies all had lower than average unemployment rates. In contrast, graduates who studied subjects that have a diffuse relationship with the labour market, ranging from Science, Social Science, Arts and Humanities to Creative Arts were found to suffer a much higher rate of unemployment.[12] For instance, male graduates with degrees in Creative

[12] There are exceptions, however. Female graduates in Science and Humanities both have lower than average unemployment rates, i.e. 6.7 per cent and 7.9 per cent as compared to 8.6 per cent.

Arts had an unemployment rate of 36.0 per cent, with a standardised residual of 3.6; and another 16.0 per cent of them were economically inactive (standardised residual being 3.5). Similarly, 22.6 per cent of female graduates in the same discipline were unemployed, with a standardised residual of 2.7. These results suggest that both male and female graduates with degrees in Creative Arts are significantly more at risk of unemployment than graduates from other subjects.

Table 4.2.2: Degree Subject and Economic Activity in 1981 - female graduates (row percentage)

	Economic Activity				
Degree Subjects	Full-time education	employed	Unemployed	economic inactive	N
Law Medicine	2.6	86.6	2.6	7.9	38
Engineering	20.0	60.0	10.0	10.0	10
Science	13.3*	77.3	6.7	2.7	75
Social Science	3.6	78.6	17.9*	0	56
Accounting, Administration	1.9	88.5	5.8	3.8	52
Humanities	6.0	77.8	7.7	8.5	117
Creative Arts	3.2	67.7	22.6*	6.5	31
Education	5.0	83.5	7.9	3.6	139
Vocational Studies	15.4*	73.1	3.8	7.7	52
Total	6.8	79.5	8.6	5.1	570

$X^2 = 45.9$, d. f. = 24, p = .005; * denotes standardised residuals exceeding 2.

The next question I shall address is: do degree subjects have any major effect on the risk of unemployment controlling for other background characteristics? We know from the analysis in the last chapter that there is a strong relationship between privileged background (via selective private education) and getting into 'elite' subjects (Medicine and Law) at universities. Are graduates from more privileged backgrounds less likely to be unemployed? To carry out formal tests, logistic regressions were run to estimate the odds of being unemployed in 1981. The response variable is a dichotomy coded 1 unemployed and 0 employed. Those who were still in

full-time education and economically inactive were excluded from the analysis. Following the analyses in the previous chapter, the range of explanatory variables remains the same, including gender, social origins, parental cultural capital, parental education, respondents' cultural activities, respondents' scores of general ability at age 11, and degree subjects.[13] As noted in the earlier discussion, the type of institution where degrees were obtained may have some effects on graduates' employment. Thus an extra variable is introduced to control for the type of institution. This is recoded[14] into a dichotomous variable to represent university and non-university institutions. As in the previous chapter, social origins are collapsed into fewer categories in the analysis of graduates. A detailed classification of social origins may not be necessary since most of the origin effects have already been filtered through the attainment of degree qualifications. Thus the eight categories are collapsed to three origins: high, middle and low social origins.[15] The nine degree subjects are collapsed into a binary variable representing subjects having 'specific' or 'diffuse' relationship with the labour market[16]. The results are presented in Table 4.3.

As we can see from Table 4.3, contrary to the impression we have from the bivariate analysis, gender does not constitute a significant effect on graduate unemployment when other factors are controlled for, although it is very close to

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[13] School type and examinations are dropped from the analysis, as they are unlikely to have significant difference on graduates' employment. This is confirmed by initial results.

[14] The original variable (N4557) includes up to 12 categories ranging from university, polytechnic, institute of higher education, further education college and so on.

[15] High social origins consist of employers and managers, professionals and semi-professionals; middle origins include routine non-manual workers, own account workers, farmers and manual foremen; and finally lower origins contain skilled manual, semi-skilled and unskilled manual workers.

[16] A binary variable 'diffuse' is constructed by collapsing the nine degree subjects. Science, Social Science, Humanities and creative arts are recoded to '1' as subjects that have a diffuse relationship with the labour market; whereas '0' represent Law and Medicine, Engineering and Technology, Accounting, Administration and Management, Education and Vocational Studies - 'subjects with a specific relationship with the labour market'.

significance in Model 3. This suggests that once the other factors are taken into account, gender does not have a net effect on unemployment.

Table 4.3: Logistic regression of unemployment of graduates

	Model 1	Model 2	Model 3
Constant	**-1.63 (.40)**	-.45 (.76)	**-2.05 (.28)**
Female	-.14 (.22)	-.24 (.23)	-.37 (.20)
Social Origins (base category: low social origins)			
high	**-1.07 (.30)**	**-.82 (.28)**	**-.84 (.25)**
middle	-.55 (.31)	-.45 (.32)	**-.61 (.30)**
Parental education	**.15 (.05)**	**.11 (.04)**	**.13 (.04)**
Parental cultural capital	-.03 (.04)		
Children's cultural activities:			
art		-.04 (.11)	
reading		.03 (.08)	
Ability at 11		**-.03 (.01)**	
Degree Subjects:			
diffuse			**.85 (.21)**
Degree institution:			
University			**-.48 (.21)**
Chi-square statistics	20.94	19.84	38.24
Degrees of freedom	5	7	6
N	839	841	980

Figures in brackets after the unstandardised coefficients give the standard errors.
Significant coefficients are shown in bold.

In Model 1, in addition to social origins and gender, parental cultural capital and parental education are also controlled. Dummies are introduced to represent high, middle and low social origins, with low social origins as the base category. As can be seen throughout all three models, social origin has a persistent effect on graduate unemployment - graduates who come from higher social origins are significantly less likely to be unemployed in 1981 than graduates from more humble social origins.

Whilst parental cultural capital is shown to be statistically insignificant, parental education appears to increase the risk of unemployment. The more educated a graduate's parents were, the more likely that he/she was unemployed in 1981. This is perhaps the most puzzling finding. One explanation may be that graduates with better

educated parents have higher aspirations and are encouraged to wait until they find a suitable job, rather than taking less suitable jobs which may or may not be related to their study or interest.[17]

Respondents' childhood cultural activities and ability are introduced in the second model, where the former is shown to have no significant effects on unemployment. However, high ability scores at age 11 are found to have a significant effect in reducing the risk of unemployment.

Finally in the third model, two dummies are introduced. The first one represents degree subjects having either a 'diffuse' or 'specific' relationship with the labour market, and the second one represents the type of institutions where degrees were granted are introduced. They are both found to have a large and significant effect on unemployment. Overall, we can see from the results that respondents with job-specific degree subjects (including Medicine and Law, Account, Administration and Management, Engineering and Technology, Education and Miscellaneous Vocational Studies) are less likely to be unemployed. In contrast, graduates with degrees in Humanities, Science and Social Science - subjects that are considered to have a more diffuse relationship with the labour market, are more likely to be at risk of unemployment.[18] This may be intensified by the declining public sector in which most graduates in Humanities traditionally serve.

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[17] This receives some support from the findings of a survey of polytechnic and university graduate entry into the labour market conducted by Brunel University. Most students thought long-term career prospects were more important than immediate salary gains and 'many were prepared to be unemployed after they graduated until they found the job to which they aspired' (Boys and Kirkland, 1988:26).

[18] Initially, model 4 included all nine subjects to test the effect of individual degree subject on unemployment. The results show that graduates with degrees in creative arts were most likely to be unemployed, others were not significantly different from each other's.

The above analysis clearly shows a substantive impact of degree subject and of type of institution where degrees were obtained on graduate unemployment. This suggests that not only is a more job-specific degree useful in finding a job, but having attended a university also represents a distinctive advantage. University graduates are seen to be less likely to be unemployed than graduates from Polytechnics and Colleges of Further Education. One possibility is that a university degree may represent better performance in A level examination[19], which implies higher academic ability. The other possibility is that employers may be looking for more than simply technical specialist skills, which only require a job-specific degree. It has been suggested that transferable skills such as 'general social, personal and intellectual skills are seen to make a graduate employee "promotable" into various management positions' (Brennan *et al.*, 1993: 95). The assumption made here is that university graduates possess certain social, personal and intellectual skills that cannot be found in non-university graduates. Whether this is necessarily true would need to be investigated further in another study.

Equally importantly, the influence of social origins has not disappeared even when degree subjects and degree institutions are taken into account. Meanwhile, parental education is found to have an unexpected effect on the chance of graduate unemployment. As for gender, we have seen in the bivariate analysis that the percentage of unemployed female graduates is lower than men. However, the formal test of gender as a factor in explaining unemployment proves to be marginally insignificant.

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[19] However, earlier models which include A level exam results showed that exam results did not affect unemployment.

The job-specific/diffuse distinction of degree subjects proves to be a useful concept in understanding the relationship between higher education and employment. However, such analysis does not tell us everything about how well graduates are doing in the labour market. For those who were in work, to what extent were graduates in certain degree subjects more successful in getting higher attainment than the others? In order to assess the difference in the level of jobs graduates obtained, we have to examine their first job attainment more closely.

Degree Education and First Job Attainment

I begin with the first job attainment[20] of all our NCDS respondents before focusing on graduates, as this will serve to demonstrate how well the graduates were doing in the labour market. In order to get some idea of the kind of jobs the NCDS cohort members were getting, their first jobs will be presented in a collapsed version of socio-economic group. Figures in Table 4.4.1 and 4.4.2 show the details.

Table 4.4.1 Qualifications and First Job Attainment - men (row percentages)

	employers & managers	professionals	semi-professionals	routine non-manual	own account	foremen	skilled manual	semi/ unskilled manual	N
degree	10.1	33.8	26.2	11.9	1.4	0.8	4.4	11.5	497
post A level	4.1	9.5	20.1	18.2	1.0	0.4	32.3	14.3	483
A level	3.4	2.4	6.8	22.9	0.6	0.6	45.3	17.9	1295
O-level	3.4	0.6	3.5	25.4	1.1	0.5	43.9	21.5	1696
CSE	1.6	0.1	1.6	12.5	1.5	0.3	47.2	35.2	883
No qualification	1.4	0	0.8	7.7	1.6	0.5	38.9	49.1	957
Total	3.4	4.3	6.7	18.3	1.2	0.5	39.7	26.0	5811

$X^2 = 2358.8$, d. f. = 35, $p < .0001$

[20] Note that respondents who started their first jobs before completing full time education were excluded from the analysis. However, respondents who had taken a year out (including taking temporary jobs which lasted for up to 15 months) before they started university were not regarded as having started their first jobs before they obtained their degree qualifications.

Table 4.4.2 Qualifications and First Job Attainment - women (row percentages)

	employers & managers	professionals	semi-professionals	routine non-manual	own account	foremen	skilled manual	semi/ unskilled manual	N
degree	7.8	13.7	43.8	26.7	0.6	0	0.6	6.8	498
post A level	1.5	2.8	41.8	34.3	0.4	0	2.2	17.0	534
A level	3.1	0.8	10.4	67.5	0.8	0.2	1.4	16.0	655
O-level	0.5	0.1	4.9	72.3	0.1	0.1	2.6	19.4	2250
CSE	0.4	0	1.9	63.4	0.1	0.1	5.2	29.0	1081
No qualification	0.3	0	0.8	41.9	0.2	0.1	7.8	48.9	990
Total	1.4	1.5	10.7	58.1	0.3	0.1	3.6	24.4	6008

$X^2 = 2676.5$, d. f. = 35, $p < .0001$

Nearly half of our cohort members (both men and women) with no formal qualifications entered semi-skilled and unskilled jobs. On the other hand, over half of all graduates entered professional and semi-professional jobs as their first jobs. This suggests that qualifications are highly associated with the jobs one gets at the point of labour market entry. Also, as we would expect, women largely entered routine non-manual work (58.1 per cent) and a very high proportion of men started off as skilled manual workers (39.7 per cent). As has been shown elsewhere (Goldthorpe, 1980; Heath and Cheung, 1997), young people move into a relatively narrow range of occupations at labour market entry. Rather few were recruited direct from full-time education into managerial or supervisory posts. The first jobs of the NCDS cohort follow a similar pattern. Very few of the NCDS cohort members became employers, managers, own-account workers, supervisors or foremen. Instead they were rather concentrated in one category: skilled manual work for men and routine non-manual work for women.

However, at the bottom end of the scale, there were still 11.5 per cent of men and 6.8 per cent of women with degree qualifications in semi-skilled and unskilled jobs. This leads to an interesting question of why graduates were unable to obtain jobs that match their qualifications. How far is this affected by degree subject? Is it true that some degree subjects carry more labour market 'currency'[21] and subsequently yield higher occupational attainment?

[21] A term phrased by Crompton (1987) to represent the value of different qualifications and training in the labour market.

Graduates' First Job Attainments

As shown in the previous section, the subject of degree has a big impact on the risk of unemployment. For those who succeeded in avoiding unemployment, degree subject may also affect the level of jobs which graduates enter. In the following section, I shall focus on graduates' first job attainment with particular emphasis on the differential outcomes of different subjects studied.

Past research has suggested that, after controlling for degree subject, the effect of social origins on the destinations of graduates should disappear (Lyon and Murray, 1993: 211). It has been argued that employers in some sectors such as the financial sector are particularly keen to recruit graduates with numerical skills (Brennan *et al.*, 1993). Jobs in this sector are considered to be well paid, skill-specific, require training and to have good promotion prospects and employment security. As a result, graduates with a degree in Mathematics, Business and Management studies, Economics and Accountancy are believed to have a much bigger chance of getting higher level jobs. In contrast, graduates from other subject areas, particularly those with non-numerical degrees, and female graduates since they are largely concentrated in Humanities, are therefore more likely to under-achieve in their occupational attainment. The following section will look at how far these scenarios apply to the NCDS graduates.

Again, in order to obtain a preliminary idea of the kind of jobs graduates entered, information on their subject groups and first job socio-economic groups are

tabulated.[22] Table 4.5.1 shows the first jobs of our male graduates by degree subject. On average, 10.2 per cent of them became employers and managers and 33.6 per cent of them got professional jobs. There is also a distinct difference between subjects. Graduates with degrees in Business Administration, Accounting and Management have the highest percentage (19.0 per cent, standardised residual = 2.5) of getting managerial jobs, possibly due to the job-specific nature of their degree subjects.

Table 4.5.1 Degree subjects by First Job Attainment - men (row percentages)

	employers & managers	professionals	semi-professionals	routine non manual	foremen & skilled manual	semi/ unskilled manual	N
Law, Medicine	5.9	76.5 *	3.9**	7.8	3.9	2.0**	51
Engineering	10.1	49.4*	20.2	6.7	7.9	5.6	89
Science	5.7	28.6	31.4	7.6	7.6	19.0*	105
Social Science	13.7	17.6**	23.5	23.5*	2.0	19.6	51
Accounting, Administration	19.0*	40.5	16.7	14.3	4.8	4.8	84
Humanities	14.3	2.9**	34.3	22.9	2.9	22.9	35
Creative Arts	6.7	0**	46.7	20.0	6.7	20.0	15
Education	8.3	0	72.2*	5.6	8.3	5.6	36
Vocational Training	0	31.8	13.6	18.2	18.2*	18.2	22
Total	10.2	33.6	26.0	12.1	6.4	11.7	488

$X^2 = 179.3$, d. f. = 40, $p < .0001$ * denotes standardised residuals exceeding 2; ** denotes standardised residuals exceeding -2.

Although a relatively high percentage of graduates with a degree in Social Science or Humanities also got managerial jobs, the residuals of 0.8 and 0.7 show that they are not significantly better off than their peers in other subjects. As suggested by past research, in general the majority of graduates became professionals or semi-professonals on graduation (Kelsall, Poole and Kuhn, 1970) though there is

[22] Note that the socio-economic groups are collapsed to six categories. Since the number of graduates entering positions as own account workers or manual foremen is extremely small, these categories are combined with skilled manual workers.

substantial difference between subject groups. Those with degrees in Medicine, Dentistry or Law have done particularly well as 76.5 per cent got a professional job - a percentage which is more than twice the average with a residual of 5.3. Also, nearly half of the Engineering graduates got professional jobs at the start of their careers and 40.5 per cent (residual of 2.6) of those who graduated with degrees in Accounting and Banking, Administration and Business also started as professionals.

Nevertheless, a high percentage of male graduates who held degrees in Education (72.2 per cent), or Creative Arts (46.7 per cent), found themselves in semi-professional jobs to start with. This is not surprising (at least for those who read Education) because traditionally they entered the teaching profession immediately after gaining their degrees. Humanities and Science graduates who have traditionally been serving the educational sector are also shown to have a higher than average percentage taking semi-professional jobs. However, 11.7 per cent of the male graduates took up semi-skilled or unskilled work as their first jobs. Those with degrees in Humanities, Creative Arts, Social Science, Sciences and even vocational studies all have a higher than average percentage taking up these jobs.[23] As we noted earlier, this phenomenon may owe its cause to the severe recession at the beginning of the 1980s when unemployment affected many people, including the well qualified. Graduates, at the point of labour market entry, were inevitably affected by the same economic situation. They might have taken jobs for which they were 'over-qualified' in the hope of avoiding unemployment. By contrast, a relatively low percentage of

[23] It is possible that some graduate training schemes in industry start new recruits 'on the shop floor'.

graduates with degrees in Engineering and Technology, Accounting and Banking, Medicine and Law and Education had to resort to semi-skilled and unskilled jobs.

The figures for female graduates show a similar picture. Table 4.5.2 suggests that of those who held degrees in Law, Medicine and Dentistry, most (as much as 88.2 per cent) became professionals in their first jobs. The large standardised residual (11.8) in this category shows that they were relatively more likely to have a professional job. 24.0 per cent of women with a degree in Banking and Accounting, Administration and Management entered managerial and entrepreneurial positions, doing better than expected (residual equal to 4.0), a much higher percentage than any other degree subject.

Table 4.5.2 Degree subjects by First Job Attainment - women (row percentages)

	employers & managers	professionals	semi-professionals	routine non manual	foremen & skilled manual	semi/ unskilled manual	N
Law, Medicine	0	88.2*	2.9**	8.8**	0	0	34
Engineering	0	33.3	44.4	11.1	0	11.1	9
Science	11.5	19.7	50.8	11.5	0**	6.6	61
Social Science	10.6	6.4	31.9	34.0	0	17.0*	47
Accounting, Administration	24.0*	12.0	14.0**	48.0*	0	2.0	50
Humanities	5.2	5.2**	36.1	42.3*	2.1	9.3	97
Creative Arts	4.0	0	40.0	36.0	12.0*	8.0	25
Education	4.8	0.8**	76.8*	14.4**	0.8	2.4	125
Vocational Training	6.8	15.9	36.4	29.5	0	11.4	44
Total	7.9	13.6	43.7	26.8	1.2	6.7	492

$X^2 = 332.9$, d. f. = 40, $p < .0001$ * denotes standardised residuals exceeding 2; ** denotes standardised residuals exceeding -2.

Nearly three-quarters of all graduates with degrees in Education (with a residual of 5.6), and nearly half of all Science graduates became semi-professionals. In fact, on average, nearly three quarters of all female graduates became either semi-

professionals or routine non-manual workers. Again, there is a certain degree of over-qualification among the female graduates. Similar to their male counterparts, a higher percentage of women graduates with degrees in Social Science (17.0 per cent with a residual exceeding two) were found in semi-skilled and unskilled manual jobs. However, the percentage of female graduate in manual work is somewhat lower than their male counterparts in general (6.7 per cent as compared to 11.7 per cent). Although some 21.5 per cent of female graduates got high level jobs (employers, managerial and professional positions), this only constitutes half of the figure for men, which amounts to 43.8 per cent. Thus a general pattern of subject specialisation and occupational attainment can be seen from Tables 4.5.1 and 4.5.2. On the one hand, both male and female graduates in Medicine and Science are highly concentrated in professional jobs, suggesting a link between 'elite' subjects and 'elite' professions. On the other hand, graduates in Education are more likely to be semi-professionals, with a high percentage of them entering the teaching profession.

In addition, male and female graduates are seen to enter different occupations. Higher percentages of men got managerial and professional jobs whereas more women were found in semi-professional positions. This appears to support the argument of 'in-market segmentation' in past research (Lyon and Murray, 1993), where an important difference has been identified between men and women graduates within each subject area in terms of labour market outcomes. With the exception of Medicine and Law, women were found to be consistently less successful in their labour market outcomes across subject areas than men, with the largest difference in Accounting, Management and Administration. For instance, 49.4 per cent of male

graduates with a degree in Engineering got professional jobs, compared to only 33.3 per cent of female graduates with the same subject. Similar patterns can be seen in other subjects including Science, Accounting and Management Studies, Social Science, and Vocational Studies, where a higher percentage of male graduates are found to get professional jobs. Women, by contrast, even with a degree qualification, are often found in semi-professional work (e.g. teaching and intermediate non-manual supervisory positions) and junior routine non-manual jobs. This confirms the observation by Lyon and Murray which suggests that highly educated graduate workers, especially female graduates and graduates with degrees in Humanities, are often found in the so-called primary external labour market (Lyon and Murray, 1993). These findings also lend support to the argument of over-qualification of graduates (Smith, 1986, Tarsh, 1987), where white-collar jobs are taken by graduate workers.

The previous analysis shows that subject specialisation is highly associated with two labour market outcomes. First, getting a job or not, and second, the kind of job one gets. Whilst the collapsed socio-economic groups[24] give an indication of the type of jobs respondents get, they do not tell us the how desirable the jobs are. The Hope-Goldthorpe scale[25] was developed to measure the general desirability of the occupation, described as 'Some shared pattern of response to symbols of general social superiority and inferiority, a consensus on the relative importance of different

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[24] The OPCS 'Socio-economic groups' are an occupationally based classification which aims to bring together people whose social, cultural and recreational standards and behaviour are similar (Office of Population Censuses and Surveys, 1970).

[25] The original variables on occupations in NCDS5 were coded using the CASOC programme (Computer Assisted Standard Occupational Coding). This coding procedure generates lots of errors. For example, the computer could not tell the difference between secretaries and company secretaries and lots of other errors of a similar nature were identified. These errors include the coding of the Hope-Goldthorpe scores (HG scores) of respondents' first jobs (Variable N530087). Eventually, the Hope-Goldthorpe scores of respondents' first job used in this thesis was derived from the 1980 occupation code in NCDS4 (Variable N6121). See Appendix 2 for full technical details.

features of occupations in contributing to their standing' (Goldthorpe and Hope, 1974:12). This scale will be adopted in the following analysis and the forthcoming chapters to examine the level of jobs respondents got.

Figures presented in Table 4.6 again suggest that it is over-simplistic to assume higher education to be a homogeneous experience in terms of labour market outcomes. This table allows us to see the different occupational scores achieved by graduates with different degree subjects.

Table 4.6: First job Hope-Goldthorpe scores by gender and degree subjects

Subjects	Men	Women
Law and medicine	69.6 (14.4)	71.6 (12.0)
	[46]	[27]
Engineering and technology	61.9 (13.4)	62.4 (17.9)
	[94]	[10]
Science	54.4 (18.4)	59.2 (13.2)
	[104]	[59]
Social science	53.4 (17.9)	47.6 (16.0)
	[63]	[65]
Account, administration	63.9 (15.2)	58.9 (15.2)
	[59]	[27]
Humanities	48.2 (16.2)	49.3 (14.2)
	[34]	[95]
Creative arts	44.8 (15.6)	47.4 (12.1)
	[15]	[25]
Education	57.2 (10.2)	57.0 (9.7)
	[35]	[123]
Vocational studies	60.7 (18.7)	56.8 (16.2)
	[42]	[56]
overall mean	58.3 (17.2)	55.0 (14.7)
Total	495	487

Mean values are followed by standard deviations. Base Ns are given in square brackets.

The job scores of different subjects vary to a large extent, with Law and Medicine being the highest and Creative Arts being the lowest. Both men and women graduates follow a remarkably similar pattern of a twenty five point difference between the

bottom and the top. Education, a subject found in the last chapter to be relatively more popular among working class students, is shown to lead to reasonable labour market outcomes in terms of Hope-Goldthorpe scores. First, it ranks fourth among all other subjects in terms of occupational standing for both men and women. Second, as we have seen in the bivariate analysis in Tables 4.5.1 and 4.5.2, very few graduates with a degree in Education (5.6 per cent for men and 2.4 per cent for women) entered semi-skilled or unskilled manual work, and few had suffered from unemployment in 1981.

When comparing the job scores by gender, the only notable difference between male and female graduates is that men obtained higher scores if their degrees were in Accounting, Administration and Management whereas women scientists gained higher scores. None the less, none of the job score differences in each subject between men and women is statistically significant.[26] To sum up, Table 4.6 shows that there are persistent and remarkable discrepancies between different degree subjects in the chances of getting high occupation scores in their first jobs. Graduates with degrees in Medicine and Law, Engineering and Technology, and Accounting and Management studies did much better than those who had degrees in Social Science, Humanities, Vocational Studies and Creative Arts. Moreover, similar patterns are found among both male and female graduates.

Although graduates with job-specific degrees generally get higher occupation scores, there are big within-group variations. For graduates with a job-specific degree, the difference in job scores is as big as 15 points (between Vocational subjects and Medicine, for example). A similar difference among degrees with a diffuse

[26] Test of significance is conducted by ANOVA to compare the mean job scores of male and female graduates.

relationship with the labour market is also found. For instance, there is a 10 point gap between Science and Creative Arts. Thus, the dichotomy of job-specific/diffuse relationship may not be adequate to explain the more subtle relationship between subject and occupation. In order to explore the differential impact of degree subjects on graduates' first job attainment, the nine degree subject groups are kept as separate variables in the modelling exercise in the next section.

Modelling First Job Attainment - Do Degree subjects matter?

The bivariate analysis in the previous section showed a strong relationship between degree subject and first job attainment. However, it does not tell us the inter-relationship between social background, subject specialisation and first job attainment. To formally test whether degree subjects affect occupational outcomes after controlling for social background factors, i.e. to ascertain the net effects of social origins, degree subjects and results of A level examination[27] on first job attainment, we have to resort to multivariate analysis.[28] The Hope-Goldthorpe score (HG score) is used as the response variable. The Hope-Goldthorpe scale is preferred since, as discussed earlier, socio-economic groups do not represent the general desirability of occupations.[29]

I have highlighted earlier that not all graduates got jobs related to their subject specialisation. In addition to the explanatory variables used in the previous analyses,

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[27] School type and O level examination results were initially taken into account but they did not reach statistical significance, largely because graduates had already gone through a highly selective and competitive process and became a relatively homogeneous group. Thus, these results are not reported.
[28] Diagnostic tests have been carried out to examine the distribution of the residuals. The residuals are shown to be normally distributed.
[29] As opposed to using categorical variables as the response variable, the use of HG score (being a continuous variable) is also a parsimonious way of studying occupational attainment, which enables easy interpretation of the results.

an extra variable - 'related occupation'[30] - is introduced in the multivariate analysis. This allows us to identify graduates who entered jobs related to degree subjects.

Four hypotheses can be tested in the following exercise. First, since the analysis is restricted to graduates, I hypothesise that the effects of social backgrounds such as social origins, parental education and cultural capital on first job attainment of graduates will have operated via subject choice in higher education. Their direct effects are expected to be relatively small or even insignificant. Second, graduates with degree subjects that have a more specific relationship with the labour market are expected to obtain higher occupational scores than their peers with non job-specific degrees. Third, since graduates who entered related occupations are able to utilise their skills and knowledge in a job they are specifically trained for, they are expected to obtain higher occupational scores. In other words, graduates with job-specific degrees who did not enter related occupations would not have obtained this advantage. In contrast, graduates who took up employment in an unrelated field[31] are expected to have lower occupational scores. Fourth, since there is a substantial difference in subject specialisation between men and women, we expect the gender effect on first job attainment to operate via degree subjects.

A series of linear regression models are used to test the above hypotheses. Separate models for men and women are run to allow for differences in the way the

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[30] Information on degree subject is extracted and matched to respondents' first jobs. The 1980 standard classification of occupation code is used to achieve this (variable N6121). A dummy variable is created, with '1' referring to related occupations and '0' to unrelated occupations.

[31] As noted before, these moves may be due to unfavourable labour market conditions. Others may change their occupational plans and decided to do something different to that of their training. Under these circumstances, re-training is likely and thus we expect that entering unrelated occupations will have negative effects on obtaining high job scores.

attainment process operates for men and women. The results are presented in Tables 4.7.1 and 4.7.2.

In Model 1 a wide range of background variables is included. There are significant effects of social origins. Male graduates from high and middle social origins achieve higher Hope-Goldthorpe scores than graduates from low social backgrounds. Unlike their roles in educational attainment, parental education and cultural capital do not reach statistical significance. The only exception is respondents' reading activities, which appears to be beneficial to first job attainment[32].

Table 4.7.1: Linear Regression of first job scores: male graduates

		Model 1	Model 2	Model 3
Constant		**55.3 (7.4)**	**48.0 (2.9)**	**48.6 (2.6)**
Social origins (base category: low social origin)				
	high	**5.1 (2.5)**	**4.7 (2.0)**	**3.9 (1.8)**
	middle	**5.9 (2.9)**	**6.3 (2.6)**	4.2 (2.3)
Parental education		.1 (.4)		
Parental cultural capital		-.4 (.4)		
Children's cultural activities	art	-1.3 (.9)		
	reading	**1.3 (.6)**		
Exams.	A level		**3.2 (.9)**	**2.4 (.9)**
Degree Subjects: (base category: social science)				
	medicine and law		**13.0 (3.6)**	3.7 (3.3)
	engineering		**6.5 (3.1)**	-4.5 (2.9)
	science		.2 (2.9)	**-9.6 (2.8)**
	accounting, administration		**8.3 (3.5)**	.1 (3.2)
	Humanities		**-10.9 (4.1)**	**-10.1 (3.6)**
	creative arts		-6.2 (5.4)	**-10.4 (4.7)**
	education		4.1 (4.1)	-6.9 (3.7)
	vocational studies		3.9 (3.9)	-1.8 (3.5)
Related occupation				**17.4 (1.7)**
Adjusted R^2		.02	.14	.33
Explained sums of squares		3261	18857	40573
Degrees of freedom		6	11	12
N		321	365	363

Figures in brackets after the unstandardised coefficients give the standard errors.
Significant coefficients are shown in bold.

[32] The effect of reading becomes non-significant after controlling for A level examination scores. It is therefore removed from the final model.

In Model 2, results of A level examination and degree subjects are introduced.[33] Good A level examination record is shown to have a major positive effect on first job scores. As was shown in the findings in the last chapter, pupils with top A level examination result are more likely to enter 'elite' subjects such as Medicine and Law at universities. It should also be noted that the introduction of 'achievement-oriented' factors, i.e. examination scores has not led to the disappearance of the effects of the ascriptive factor of social origins.

Degree subjects are found to have major effects on first job attainment. The results here clearly demonstrate that male graduates with degrees in Medicine and Law enjoy a major advantage in their job scores when compared with Social Scientists. Those in Engineering and Technology, Accounting, Administration and Management also benefit with higher scores. Whereas there is no significant difference between graduates in most other subjects, those in Humanities are by far the least successful in terms of first job attainment. Male graduates with degrees in Humanities with similar A level examination results are predicted to suffer a disadvantage of 10.9 points in job scores as compared with Social Scientists. This difference is even bigger when compared to doctors and lawyers, reaching 23.9. These results confirm hypothesis two that more job-specific degrees lead to higher occupational scores.

It should be noted that the effect of A level examination results remains unexpectedly persistent, even when degree subjects are controlled. This could be an institutional difference as traditionally students with better A level results are more

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[33] Note that parental education and cultural capital are not significant in model 1 and are removed from the analysis by this stage due to the rapidly decreasing number of cases.

likely to be admitted to universities whilst those who perform less well often go to Polytechnics or Colleges of further education. This finding may also shed some light on employers' preference in recruiting graduates. It has been suggested that employers are more in favour of graduates from traditional universities than graduates from polytechnics and technical colleges (Brennan *et al.*, 1993).[34] However, a further test shows no significant difference in the job scores of graduates from different types of institution[35]. On the other hand, results from the above multivariate analysis do confirm previous research which suggests that educational performance prior to higher education also has significant impact on job attainment (Brennan *et al.*, 1993).

A variable measuring related occupation is introduced in the final model. This brings a major improvement in the variance explained. Male graduates who entered an occupation related to their degree subject have a 17-point advantage in their first job occupation scores. The introduction of 'related occupation' has reduced the social origin effects, where middle social origin is no longer significant. This confirms the prediction in hypothesis one that the effects of social origins have operated via subject specialisation in degree education. However, as we can see, the origin effects have not totally disappeared. The introduction of 'related occupation' also leads to a modest reduction in the size of the A level examination effect. Moreover, graduates in Medicine and Law are no longer significantly different from social scientists in their

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[34] Brennan and his colleagues argued that there is a 'binary' or 'stratified' system of higher education between the university sector and the polytechnic and college sector; and there exists a hierarchy in employers' preferences for graduates. Such a hierarchy is partly determined by the A level grades graduates have which are seen to be an important 'screening mechanism' in recruitment. University graduates are seen to be more desirable, possibly because their A level performance is higher than graduates from the non-university sector (Boys and Kirkland; 1988; Brennan *et al.*, 1993).

[35] An earlier model (not reported) controlling for the type of institution graduates obtained their degrees from shows that institution type does not have a significant effect on the first job scores.

job scores. Again, the modelling results support the hypothesis that entering a related occupation is beneficial to one's occupational attainment.

For the NCDS female graduates, the results give a slightly different picture. As we can see from Model 1 in Table 4.7.2, none of the background variables ranging from social origins, parental education, parental cultural capital to respondents' childhood cultural activities has a significant impact on female graduates' first job attainment. In Model 2, whilst A level results do not reach statistical significance, degree subjects are shown to be highly significant in determining the first job occupation scores of female graduates. Female graduates with 'elite' degrees enjoy an advantage of 22 points. Those in traditionally male dominated subjects such as Science, Engineering and Technology also enjoy a substantial advantage in job scores by about 12 points. Whilst male graduates with degrees in Education and Vocational Studies do not differ from their peers in Social Science, women in these two subjects also perform significantly better with an advantage of around eight points.

Table 4.7.2: Linear Regression of first job scores: female graduates

		Model 1	Model 2	Model 3
Constant		**63.0 (6.9)**	**47.7 (2.6)**	**46.9 (2.2)**
Social origins: (base category: low social origin)				
	high	-.5 (2.3)	1.4 (1.8)	1.0 (1.6)
	middle	-3.8 (2.6)	-1.3 (2.4)	-1.2 (2.0)
Parental education		-.1 (.3)		
Parental cultural capital		-.1 (.3)		
Children's cultural activities	art	.3 (.8)		
	reading	-.6 (.6)		
Exams. -	A level		-.1 (.8)	-.1 (.7)
Degree Subjects: (base category: social science)				
	medicine and law		**21.6 (3.6)**	**10.7 (3.3)**
	engineering		**12.7 (4.9)**	5.1 (4.3)
	science		**11.6 (2.8)**	1.9 (2.5)
	accounting, administration		**8.4 (3.6)**	.8 (3.2)
	Humanities		1.6 (2.6)	-1.3 (2.2)
	creative arts		-2.6 (4.0)	-5.4 (3.4)
	education		**8.3 (2.5)**	-1.7 (2.3)
	vocational studies		**8.5 (2.9)**	2.7 (2.5)
Related occupation				**15.6 (1.4)**
Adjusted R^2		-.01	.13	.36
Explained SS		894	12253	29885
Degrees of freedom		6	11	12
N		353	371	367

Figures in brackets after the unstandardised coefficients give the standard errors.
Significant coefficients are shown in bold.

In the final model, broadly similar results are found as in the models for men. The introduction of related occupation has reduced the effects of individual degree subjects on first job scores. The large effect of related occupation represents a major advantage graduates enjoy over those who did not get a job that is related to their studies.

Whilst separate analyses allow for differences in the way the attainment process operates for men and women, they do not tell us if men are more or less successful in first job attainment. A pooled analysis (not reported) including both men and women is conducted. Controlling for social origins, female graduates' job scores

were about three points lower than those of male graduates. This disadvantage is, however, reduced to non-significance after controlling for degree subjects. This suggests that the effect of gender on first job attainment is mediated by subject specialisation. Thus this finding supports hypothesis four that the gender difference in occupational attainment is mediated by subject specialisation.

From the separate analysis, it is notable that results of A level examination are beneficial to male graduates' first job scores but not to women's. An interaction effect is tested between results of A level examination and gender. The finding suggests than female graduates with the same A level results are worse off than men.[36] It also raises the question about how the relationship between subject specialisation and first job attainment varies between men and women. Again, interaction terms are introduced to test the effects of different subjects and gender on first job scores. Results are largely insignificant but women studying Accounting, Administration and Management[37] are significantly worse off than men in the same subjects, indicating that the occupational attainment of graduates in the same subject can be different according to gender.

Summary and conclusion

The findings of this chapter can be summarised in five main points. First, university graduates, in particular those with job-specific degrees, were less likely to be unemployed. Second, graduates from more privileged backgrounds were less likely to be unemployed. Third, degree subjects had a huge impact on first job attainment. Fourth, graduates who entered an occupation related to their subjects were found to

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[36] The coefficient of the interaction effect between A level exam scores and gender is –2.3, with a standard error of 1.1.

[37] Women are 9 points worse off than men in the same subjects (s.e. = 4.2).

achieve higher occupation scores. Fifth, in general the relationship between subject specialisation and first job attainment does not vary between men and women, with the only exception of graduates in Accounting, Administration and Management.

The relationship between qualifications and the labour market is by no means straightforward. Almost one in ten graduates, though highly qualified, was unemployed in 1981.[38] Degree institutions were unexpectedly important in employment opportunities. University graduates were less likely to be unemployed. This is possibly due to employers' beliefs about, or preference for the more 'superior' personal qualities of university graduates. More prestigious universities may also be an indication of other characteristics (such as more privileged social background). Indeed, graduates from more privileged origins were less likely to be unemployed.

Broadly speaking, graduates in more job-specific degree subjects such as Medicine, Law and Engineering are shown to have an advantage over those with general degrees, although women scientists tend to achieve higher scores than graduates with degrees in Vocational Studies and Education. Graduates in Law, Medicine, Pharmacy and Accountancy are seen to be consistently the most successful group. It may be due to the fact that these professions have much more specific requirements than other occupations where graduates are required to possess particular skills and knowledge, and are consequently rewarded with higher occupational attainment. Perhaps, more importantly, these professions are usually

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[38] An earlier analysis found that graduates were more likely to be unemployed in 1981 than non-graduates controlling for social origins, parental education, parental cultural capital and gender. This may be due to the low unemployment rate among respondents with A level and post-A level qualifications. The high vocational content of the latter may explain the low unemployment rate.

protected by professional organisations with an interest in maintaining high entry standards and a strong market position.

Occupational outcomes (both getting a job or not, and getting different types of jobs) are highly dependent on subject specialisation. Not only were graduates with degrees in non job-specific subjects particularly prone to the risk of unemployment; they also took up lower level jobs (as indicated by the lower job scores in the multivariate analysis). Such moves had led to what is generally regarded as over-qualification. This may be due to some graduate training schemes in Industry where employers started them 'on the shop floor'. This could also be a result of the declining public sector where traditionally most graduates with general degrees were employed. Graduates may also feel over-qualified in jobs at the beginning of their careers but in order to avoid unemployment when the labour market situation is bad and job opportunities are low, a considerable percentage of them still took up semi-skilled or even unskilled work.

The experience of the NCDS cohort broadly confirms previous research in graduates' employment in that their early employment is highly dependent on their subject areas in higher education. However, the importance of job-specific qualifications may decrease in their later jobs as other factors such as work experience, seniority and other personal qualities become more important. We shall explore this in Chapter Seven.

Although results from the bivariate analysis show that female graduates, even with the same degree subject, are highly concentrated in semi-professional jobs, whereas male graduates are more likely to have professional jobs or managerial posts, evidence presented in the multivariate analysis, however, suggests a much less

segmented picture than was suggested by previous research (Lyon and Murray, 1988; Brennan *et al.*, 1993). The results also suggest that male graduates gain higher first job attainment than their female counterparts, although this difference is hardly visible after degree subject has been taken into account. This is because there are more men in lower as well as in higher occupations (i.e. there is more variance in men's job scores).

Overall, it is clear that graduates in Medicine and Law maintain their 'elite' positions by obtaining higher occupational attainment. These are the people who are most likely to have attended private secondary education and to have come from a privileged background. Chapters 3 and 4 put together a general picture revealing the social process of how inequalities in occupational attainment are reproduced. Children from more privileged backgrounds are more likely to succeed in gaining higher occupational attainment by having a more privileged secondary education and by gaining access to the 'elite' faculties at university.

However, the effects of social and cultural background, and other institutional effects on occupational attainment only constitute part of the process of occupational attainment. As noted in the introduction, structural factors such as the size of establishments and industrial sectors also have a part to play. The next chapter will lead us to a full assessment of the effects of these factors on first job attainment for all NCDS cohort members.

Chapter Five

Industrial Sector and Occupational Recruitment

Evidence found in Chapter Four suggests that there is a clear and strong relationship between subject specialisation and labour market outcomes. The labour market was found to reward different fields of specialisation unevenly. Despite the fact that both male and female graduates had achieved degree qualifications, they were still subject to different occupational outcomes. It was found that the difference in occupational outcomes was largely due to the subject/employment relationship - whether it was a specific or diffuse relationship. Graduates with degrees which bear a specific relationship to the labour market were found to have a better chance of getting a job as well as acquiring higher-level occupations. The analysis in the last chapter also noted another important dimension of the labour market that may affect occupational attainment - industrial sector. This chapter deals with the effects of structural factors such as industrial sector and firm size on recruitment (first job attainment) of all NCDS cohort members.

At the point of labour market entry, due to the absence of work experience or other work related skills and resources (such as personal contacts, ability to co-operate and on-the-job training) individuals have few other known attributes to offer to their potential employers apart from their qualifications. As has been suggested, the introduction of academic certificates in the British education system has led to a heavy reliance on formal qualifications by employers in the recruitment process (Heath and Cheung, 1997). Educational credentials are therefore especially important at the transition from school (or university) to work. (See also Erikson and Jonsson, 1996) Thus we expect meritocracy to be most developed at entry to the labour market.

This means that formal qualification is expected to have a larger effect on first job than on subsequent jobs (i.e. promotion). In this chapter, a detailed investigation will be carried out of the first job attainment of all NCDS cohort members. The question which this chapter addresses is: how important are structural factors such as industrial sector and firm size in affecting first job attainment?

As I have argued in Chapter One, traditional stratification research describes the overall relationship between origins and destinations, and the role of qualification in mediating the effects of social origins on class destinations (Blau and Duncan, 1967; Halsey, Heath and Ridge, 1980; Heath, Mills and Roberts, 1992; Kerckhoff, 1990, 1993). The factors generally thought to be responsible for explaining differential occupational attainment are ascribed and achieved characteristics, such as social origin, gender, ethnicity and education. However, labour market research has suggested that the experiences and rewards workers have in different industrial sectors vary to a large extent (Piore, 1975). Traditional status attainment research has also been criticised for neglecting the difference in job rewards for the same human capital in different sectors of the economy (Beck *et al.*, 1978).

In Britain, little attention has been drawn to structural variables such as industrial sector and size of establishment which may be responsible for unequal occupational attainment of individuals. To what extent do employers or firms in different industrial sectors vary in the rewards they give equally qualified individuals? Moreover, important differences may exist between industrial sectors due to the different skills employers require in different sectors. Some sectors require well-qualified recruits in highly-skilled and knowledge-specific jobs, whilst other sectors

may demand general abilities rather than specific skills. As a result occupational outcomes may differ between industrial sectors.

Another factor that may affect occupational attainment is firm size. It has been suggested that a large firm size is closely related to better paid jobs, better working conditions, and better chances of promotion (Kalleberg and Sorensen, 1979). It has also been suggested that larger firms offer higher rewards due to the greater need for specialised skills, the greater capital investment and perhaps even the greater complexity of the organisation. It is likely that large firms have higher levels of unionisation, which may explain the better working condition and higher pay in these organisations. Moreover, it is argued that large firms are prepared to offer more attractive pay and other fringe benefits to maintain the stability of the workforce since employee turnover tends to be more expensive for large firms (Kerckhoff, 1993).

Past research has revealed that large bureaucracies and public organisations are more likely to rely on formal impersonal recruitment procedures such as the use of press advertising and job centres (Elias and White, 1991). They found that whether or not a firm uses a qualification requirement as part of its recruitment strategy is significantly dependent on organisation size and industrial sector (Elias and White, 1991). They also suggested that firms with fewer than 25 employees are much less likely to stipulate a minimum qualification requirement, while public sector organisations are more likely to make such requirements of potential employees. The use of formal channels in recruiting staff (or in finding a job on the employees' side) can therefore be expected to rely more on 'merit' or achieved characteristics.

Past research on methods of job search has generated rather contradictory results. In the United States, Granovetter (1974) found that better jobs with the highest

incomes were obtained mainly via informal channels.[1] However, another American study suggested that there were significant positive effects of the use of formal channels on occupational attainment (Lin, Vaughn and Ensel, 1981a). Researchers in the Netherlands (Flap and De Graaf, 1981, 1989) also expressed doubts about the effectiveness of informal channels for access to higher level jobs. Flap and De Graaf noted that, on the one hand, Granovetter did not make use of a representative sample (Flap and De Graaf, 1986) and, on the other hand, informal sources do not generally lead to higher occupational prestige and income (Flap and De Graaf, 1989). Using Dutch data, they found that 'respondents who got their jobs via formal channels take more advantage of their own education to attain higher occupational prestige' as compared to those who used informal channels (Flap and De Graaf, 1986).

Admittedly we cannot assume that employers who use formal channels in recruiting staff are automatically prepared to reward individuals with higher attainment. What we expect is that sectors that rely on formal channels (as opposed to the use of informal channels such as family or social network) in recruiting staff will be more meritocratic. From the potential employee's point of view, particularly at the point of labour market entry, the lack of work experience means that qualifications become a particularly important factor in getting a job. In other words, we expect to see stronger association between qualification level and job level in such sectors.

The NCDS does not have direct measures of employers' recruitment methods. However, information on the channels respondents used to get their first jobs can be taken as a proxy to measure recruitment methods. In the job search process, as I will demonstrate later, members of the NCDS cohort who used formal methods to find

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[1] See Granovetter's 'The Strength of Weak Ties' (1973) and 'Getting a Job' (1974) for more details on the use of social network in getting jobs.

work (such as answering advertisements from newspapers, through job centres, employment offices and college careers offices) are generally better qualified. These channels can be regarded as 'meritocratic channels' since qualifications will play an important role in the formal selection process. Other respondents, particularly the less qualified ones, rely on more informal channels to get jobs such as personal contacts through friends and relatives. Thus the job search method provides us with an indirect measure of the degree of meritocratic practice of organisations. As I will show later, there are large variations between industrial sectors in the use of formal channels in getting first jobs.

The rest of this chapter is divided into four sections. In the next section, past research in Britain on sectoral influences on first job attainment is reviewed. The second section looks at the different ways of classifying industrial sectors and some of the inadequacies of these approaches are discussed. In the third section, factors which are hypothesized to affect recruitment are examined empirically by a series of bivariate analyses and through comparing the mean scores of first jobs. This is followed by section four which, through multivariate analyses, examines the net effects of structural factors on recruitment firstly for all male and female respondents and secondly for male and female graduates only. Separate multivariate analyses are also run to compare the effects of formal qualifications on recruitment between different channels of job search.

Past research in Britain on sectoral influence on first job attainment

In their study of 1960 graduates, Kelsall *et al* found distinctive differences between industrial sectors in graduates' first employment. Their classification of industrial sectors consisted of nine categories, namely public administration,

education, industry, commerce, private professional practice, churches, forces, communication and miscellaneous (Kelsall *et al*, 1970: 32). Over 40 per cent of the graduates in their survey entered the education sector, 26 per cent started in industry, and 12 per cent in public administration. Kelsall *et al* also identified diverse patterns between graduates of different disciplines, of different universities and with different classes of degree. Male and female graduates were also likely to enter different industrial sectors. Whilst male graduates were equally likely to enter either education or industry, their female counterparts were more inclined to enter education (Kelsall *et al*, 1970: 35).

In addition, Arts graduates in the Kelsall study were found to display a greater propensity to enter the education sector as their first employment, whilst technologists were most likely to enter industry. A high proportion of Law graduates was found to enter private professional practice and there was a tendency for applied scientists and civil engineers to enter public administration[2]. This indicates that there may be a close relationship between the subject of degree and the industrial sector which graduates enter. However, the findings of Kelsall and his colleagues remain highly descriptive. Their analysis also suffers from the lack of formal tests of the effects of industrial sector on first job attainment. Moreover, they did not consider whether the effects of qualifications and social origins vary across industrial sectors.[3]

In his study of the early career pathways of the NCDS cohort, Kerckhoff (1993) distinguished the production sector from services. He further divided the core

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[2] Kelsall *et al* argued that this is to be expected due to the quantity of civil engineering and construction work commissioned by local and central authorities.

[3] This study is quite dated and things have probably changed over time. More recent studies on employment in different industrial sectors largely concentrate on university graduates (See Lyon and Murray, 1993; Brennan *et al*., 1993).

from the peripheral industries. Industries with high value added or high gross domestic product per employee were classified as core industries whereas the others were classified as peripheral. As a result, Kerckhoff identified four major industrial sectors - core production, core service, peripheral production and peripheral service (1993: 123-4). His findings suggest that there was a modest tendency for those with poor academic qualifications to enter the smallest private firms in the peripheral sectors. In contrast, those with better academic records were somewhat more likely to enter public firms, but entry into the labour force was largely a random distribution process. He also found that the peripheral production sector had a negative effect on occupational prestige at age 23 for both men and women even when qualifications were controlled for (Kerckhoff, 1993: 130). He concluded that it was most advantageous for both men and women to be in the core service sector. There was a greater core-peripheral difference for women than men but the difference between the core industrial sector and the core service sector was greater for men than it was for women (1993:132). However, as researchers have convincingly shown (see Kaufman and Hodson, 1981; Zucker and Rosenstein, 1981), the distinction between core and periphery sector is insufficient to capture the more complex structure of the labour market. Further disaggregation to examine these micro-processes is needed. Perhaps more importantly, Kerckhoff never examined the extent of the effects of formal qualifications on occupational attainment in different industrial sectors using separate analyses for each sector. This poses a major limitation on his study because no direct comparison between sectors was made. Until separate analysis is carried out for each sector, his conclusion that 'different sectors provide very different kinds of opportunities and rewards' remains unwarranted.

Research on graduates' participation in the labour market has also reported sectoral differences in employment patterns (Dolton, 1992). In Dolton's study of graduates' employment, five major employment sectors were identified: public administration, education, industry, commerce and self-regulating professions[4]. As with Kelsall's earlier work, a high proportion of graduates from the 1960 cohort was found in the education sector[5], particularly in the case of female graduates. For the 1970 and 1980 graduate cohorts, there was, however, a sharp shift in employment from education towards commerce and the self-regulating professions. A steady expansion of the commercial sector was recorded since the 1970's. It became the largest first destination of graduates, reflecting the growth of employment opportunities in banking, accounting, insurance and allied sectors. Such evidence may suggest that there is a link between the decline and growth of industrial sectors[6] and differential outcomes in occupational attainment. It is plausible that more job opportunities are available in the booming financial sector that shows a particular interest in recruiting well-qualified graduates and therefore better rewards are offered in this industry. In contrast, the decline of the education and public sectors which leads to a reduction in demand for teachers and civil servants may help explain their subsequent lower occupational outcomes.

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[4] Self -regulating professions include accountants, lawyers, solicitors, and actuaries.

[5] The proportion of male graduates entering education was 34 per cent in 1960 and the figure for female graduates was 61 per cent. These figures had fallen sharply in 1980 to only 14 per cent for men and 35 per cent for women (Dolton, 1992:110). The public administrative sector has also experienced a steady expansion in the recruitment of graduates between 1960 and 1970, but the proportion of graduates employed in this sector fell back to its original level in 1980. The 1980's also saw a tremendous decline in manufacturing industries. Meanwhile, the growth of the service sector brought along not only the increase of employment opportunities, but also the increased participation of women in the labour market.

[6] Past research has suggested that the overall changes in labour market trends, technologies and organisations has led to a growth in skill and knowledge intensive occupations, particularly for technologists and engineers and support services such as accountants, data processors, marketing specialists and so on (Brennan *et al.*, 1993).

Classifying Industrial Sectors

An essential tool for the examination of differential occupational returns to qualifications between industrial sectors is a proper classification of sectors. Although it is widely agreed that the labour market is divided into different sectors or segments[7] (Piore, 1975; Hodson, 1977; Beck *et al.,* 1978; Tolbert *et al.,* 1978, 1980; Kaufman and Hodson, 1981), each with its own distinctive relationship between the employers and their employees and organisational characteristics, there is no consensus on how industrial sectors should be classified.

The traditional approach of classifying industrial sectors was largely derived from the dual economy theory. According to the dual economy theory, the economy can be divided into *core* and *periphery* sectors (Beck, Horan and Tolbert, 1978; Bibb and Form, 1977; Hodson, 1977 and Tolbert, Horan and Beck, 1980). The core sector consists of firms that are capital intensive, with large numbers of employees, with a high level of unionisation, large profits, large yearly sales and high productivity. These firms tend to employ advanced technologies. One of the major characteristics of firms in the core sector is their monopolistic or oligopolistic nature. In contrast, the periphery sector is made up of firms with small-scale capitalisation, small number of employees, low level of unionisation and small size. They are often regional, labour intensive, and have only single product lines. Firms in the periphery sector operate in competitive markets, employ low levels of technology and have low productivity (Horan and Beck, 1980).

[7] The terms 'sector' and 'segments' are sometimes used interchangeably. Labour market segments are concepts used in segmentation theory, which are often referred to as the different non-competing labour markets in the larger overall labour market. Meanwhile, sectors are divisions according to different types of industrial classification, hence, are more often known as industrial sectors. To avoid confusion, the term sector is used throughout this chapter and the remaining thesis.

Despite broad agreement on the core and periphery dichotomy, heated debates still carry on about the different ways of identifying industrial sectors. In one of the earlier attempts to demonstrate the economic stratification of industrial sectors, some sociologists followed the eight major industrial groups stipulated by the Census. These were then classified into the core and periphery sectors (Bibb and Form, 1977). According to Bibb and Form, in the core sector we will find durable goods manufacturing, selected non-durable goods industries[8], mining, construction, transportation, public utilities and the government. In the mean time, the peripheral sector includes the services, wholesale and retail trade, finance, and non-durable goods manufacturing. Others divided the sectors according to wage rates and stability of employment (Tolbert, Horan and Beck, 1980).

Yet, none of these classifications was satisfactory. Bibb and Form's attempt to operationalise industrial sectors was criticised for lacking empirical data (Kaufman and Hodson, 1981:3). Tolbert, Horan and Beck were highly criticised for excluding government and professional sectors from their analysis, but more seriously, for their circularity. As it has been pointed out:

> There are, however, a number of serious flaws in the analysis of Tolbert *et al.* Most importantly, their conceptualisation of economic segmentation is contaminated by a circularity between defining characteristics of sectors and outcomes resulting from economic segmentation. That is, included in the indicators which they use to define sectors are measures of important labour market outcomes (e.g. wages and job security/stability) which should be considered only as dependent variables. Such circularity invalidates the use of their measures of economic segmentation for testing hypothesis concerning labour market outcomes (Kaufman and Hodson, 1981: 5).

[8] Bibb and Form classify chemicals and allied products manufacturing, petroleum and coal, rubber and miscellaneous plastics manufacturing as core industries.

Other critics such as Zucker and Rosenstein have convincingly argued that the classifying principle of the 'core and periphery' concept suggested by the dual economy approach is inconsistent and inadequate for understanding the more complicated structure of the labour market (Zucker and Rosenstein, 1981). According to the dualistic approach, apart from higher levels of unionisation, it is expected that a more experienced, educated work force will be found in the core sector (Bluestone *et al.*, 1973; Beck *et al.*, 1978). In their paper analysing income attainment, Zucker and Rosenstein disproved beliefs that workers in the core sector are more experienced and better educated than those in the periphery sector. They found workers with significantly more years of schooling and higher levels of credentials in the peripheral sector according to Bibb and Form's classification (Zucker and Rosenstein, 1981: 875). They also found very little difference in earnings between the two sectors (Zucker and Rosenstein, 1981: 879), thus calling into question the validity of such a classification of sectors.

Kaufman and Hodson (1981) suggested that industrial sectors should be defined empirically using different sets of industrial, labour market, and labour force characteristics such as concentration, size, capital intensity or labour intensity, foreign investment, government intervention, profit, autonomy, productivity, unionisation and growth (Kaufman and Hodson, 1981: 8-9). A new classification was introduced by Kaufman and Hodson. This classification, though, is also derived from the concept of core and periphery. It consists of eight sectors: oligopoly sector; core sector; wholesale sector; periphery and small shop sector; core utilities, finance and periphery utilities sector; core transport and periphery transport sector; local monopoly, education and non-profit and agricultural sector; and brokers, real estate, ordinance

and tobacco sector. This new classification, Kaufman and Hodson claimed, captures better the complexity of the structure of the economy of the United States.

In Britain, the most commonly available schema for defining industrial sectors is the Standard Industry Classification (SIC) which initially contains 100 categories (from 0-99). Official statistics have relied largely on the SIC which collapsed the 100 categories to ten major industries, ranging from agriculture, forestry and fishing; energy and water supply industries; mineral extraction, metal manufacturing; manufacturing; construction; distribution, hotels and catering, transport and communication; banking, finance, insurance, business services to other services. According to this classification, public administration, education, research and development, medical and health, social welfare, recreational and cultural services, personal and domestic services all come under the same category of 'other services'. This classification is evidently far from satisfactory since the organisation structures, knowledge contents and skill levels within these industries may vary to a large extent. Such a crude classification is highly problematic since the heterogeneous nature of the categories may blur the underlying differences between industrial sectors in the labour market and hence may lead to biased conclusions in empirical studies. A more detailed and precise classification, which reflects the different structural characteristics of industrial sectors, is badly needed.

Despite severe criticism of the dualistic approach, recent research on social structure and career deflections in Britain still adopted this classification of industrial sectors (Kerckhoff, 1993). Kerckhoff believed that once other dimensions such as size of firm and public-private control are taken into consideration, it is acceptable to

employ a crude division. As described earlier, based on the simple dichotomy of core and periphery, Kerckhoff initially divided production industries from all others.

Using the National Child Development Study (the same date set as the one used for this thesis), Kerckhoff examined the occupational prestige of the jobs the NCDS cohort members had at age 23. He found no difference between the backgrounds of the men and women who entered the labour market in the four different industrial sectors that he distinguished. He also reported only a weak tendency for men and women with better academic achievements to obtain first jobs in the core service sectors (Kerckhoff, 1993:124). Nevertheless, an association between industrial sector and firm size was established. His analysis showed that those working in the largest firms were most commonly found in the core production sector, and those working in the smallest firms were most commonly found in the peripheral sector. More importantly, he found that there were some variations in the effects of industrial sectors on respondents' job attainment in 1981. However, whether or not such classification is sufficient to capture the differential occupational attainment of individuals in each industrial sector needs a proper test with a finer classification.

In Sweden, it was not until recently that attention was drawn to sectoral differences in the occupational attainment process. Erikson and Jonsson (1996) began to look at the varying effects of qualifications in different industrial sectors in the labour market (Erikson and Jonsson, 1996). They suggested a more detailed schema to define labour market 'segments'. It is, however, obvious from their attempt to define labour market segments that by labour market segments, they actually mean industrial sectors. They wrote:

> Technology, production processes, product characteristics and goals of organisations should influence a categorisation. We think it is important to say that labour market segments are something different than social classes and thus, social relations at the work place, and employment relations should not be the most important defining criteria of labour market segments. In our view, organisations dominated by service relationships are better understood in terms of social class than labour market segment. Instead, we use sector and industrial branch as the basis for distinguishing labour market segments (Erikson and Jonsson, 1996: 4).

As Erikson and Jonsson observed, the service sector[9] is often believed to be highly dependent on merit and characterised by formal recruitment procedures based on universalistic principles as suggested by theorists of post-industrialism (Bell, 1973). In contrast, personal traits such as interpersonal skills and resources (skills which were not obtained from formal qualifications) are believed to be more important in the trade and business sectors, and perhaps even in the primary sectors where such skills and resources are transmitted across generations within families. In the latter case, recruitment may not be based so much on achieved characteristics. Rather, ascriptive characteristics may become more important (Erikson and Jonsson, 1996:5).

Based on these hypotheses, Erikson and Jonsson distinguished between four broad sectors: (1) service, (2) trade[10] (retail and wholesale), (3) industrial production, and (4) primary production. Both the nature of work and the organisation goals are different between these sectors. They further distinguished the service and industrial production sectors into finer classifications, generating a total of 14 sectors. Not only

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[9] The service sector is an umbrella term in the Erikson and Jonsson's classification, as opposed to the production and trade sectors. This includes the professional and administrative sectors, and other non-professional and non-administrative services.

[10] They argued that jobs in the trade sector 'could, as symbolised by the salesman, be expected to depend primarily on personal traits that are not taught in school' and treated it as a separate sector from the service sector (in the conventional sense, which includes wholesale and retail).

were the service sectors divided into public and private segments, they were also divided according to the character of the organisation: (a) professional, (b) administrative or bureaucratic, (c) other: non-professional, non-administrative type of organisation. They argued that a professional organisation does not only consist of employees with high education; the defining criterion is also whether the service provided is characterised by the need to employ people with professional knowledge and /or specialised skills. Schools and hospitals are examples of these organisations in the public sector, whereas consultant and related organisations of this kind can be found in the private sector (architects, engineering firms, law firms and dentists). Examples of administrative organisations are state and local government bureaucracies in the public sector, whereas bank and insurance companies are regarded as private bureaucracies. For the non-professional and non-administrative organisations, postal service, telecommunications and railway services are examples in the public sector. On the other hand, personal service, non-profit organisations, transport and mass-media are classified in the private non-professional and non-administrative sector.

In the industrial production sector, Erikson and Jonsson distinguished between three forms of production: (a) process industry, (b) craft industry, and (c) traditional manufacturing. Similar to the service sector, they were not satisfied with this three-way classification due to its heterogeneity. They further divided the process industry into three segments: (i) electricity, water and gas, (ii) hi-tech chemical, pharmaceutical or pulp-milling industry, (iii) less hi-tech productions of food and drinks. Traditional manufacturing is distinguished from craft industry because it is directed towards mass consumption and the production of standardised goods for

industry or household whereas the latter requires skilled workers (construction, repair, printing and tools industry). The traditional manufacturing segment is again further divided into two according to the level of technology involved (i.e. hi-tech or less hi-tech production).

The Erikson-Jonsson reformulation of the industrial sector may not be the perfect classification. However, it can be regarded as one of the more useful classifications of industrial sectors. First, it takes into account the multidimensional characteristics of firms and industries such as the level of technology, character of the organisation, nature of work (service or industrial production) and organisation goals (professional as opposed to administrative), and nature of ownership (public - private). Second, more importantly, this classification is designed for a similar purpose as this study's: to test the varying degree of meritocracy in sectors' recruitment and promotion procedures. The Erikson-Jonsson classification is therefore adopted for the empirical test of sectoral differences in occupational attainment in this thesis.

Brief Description of Variables

In addition to the variables used in the previous chapters[11], three key variables are added, namely industrial sector, firm size and methods used in getting one's first job.

Industrial Sector of first job: (Variable N6128)

I have discussed the different ways of classifying industrial sectors in the introduction to this chapter and I shall not repeat it here. The Erikson and Jonsson classification of industrial sector is used in this thesis since it is designed for a similar purpose: to test the varying degree of meritocracy in recruitment and promotion procedures across industrial sectors. This classification contains ten different sectors:[12]

1. Professionals: education and research, medical and health, consultants, doctors and lawyers;
2. Public administration: government and local authorities;
3. Private administration: banking and finance, insurance;
4. Public services: transport and communication, postal services;
5. Private services: hotel and catering, domestic, personal and other services;
6. Process industry: energy, gas and water, and food and drink;
7. Trade: distribution, wholesale and retailing;
8. Craft industry: construction, motor repair, tool industry and shipbuilding;
9. Manufacturing: metal, car, households, and all other manufacturing, mineral extraction;
10. Primary production: agriculture, forestry, quarrying and fishing.

Size of establishment (Variable N4217)

Information on the size of establishment is taken from NCDS4. Firms with 1 to 24 employees are defined as small firms and all firms with 25 employees and more are defined as large firms. This variable is recoded into dummy variables: 1 (representing large firms) and 0 (small firms).

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[11] These range from social origin, parental education, cultural capital of both parents and respondents, ability, schools to qualifications.

[12] The NCDS does not allow further disaggregation of the industrial production sectors according to the level of technology involved due to the limited size of the cohort member population in each sector. Hi-tech and low-tech process industries are therefore treated as one category.

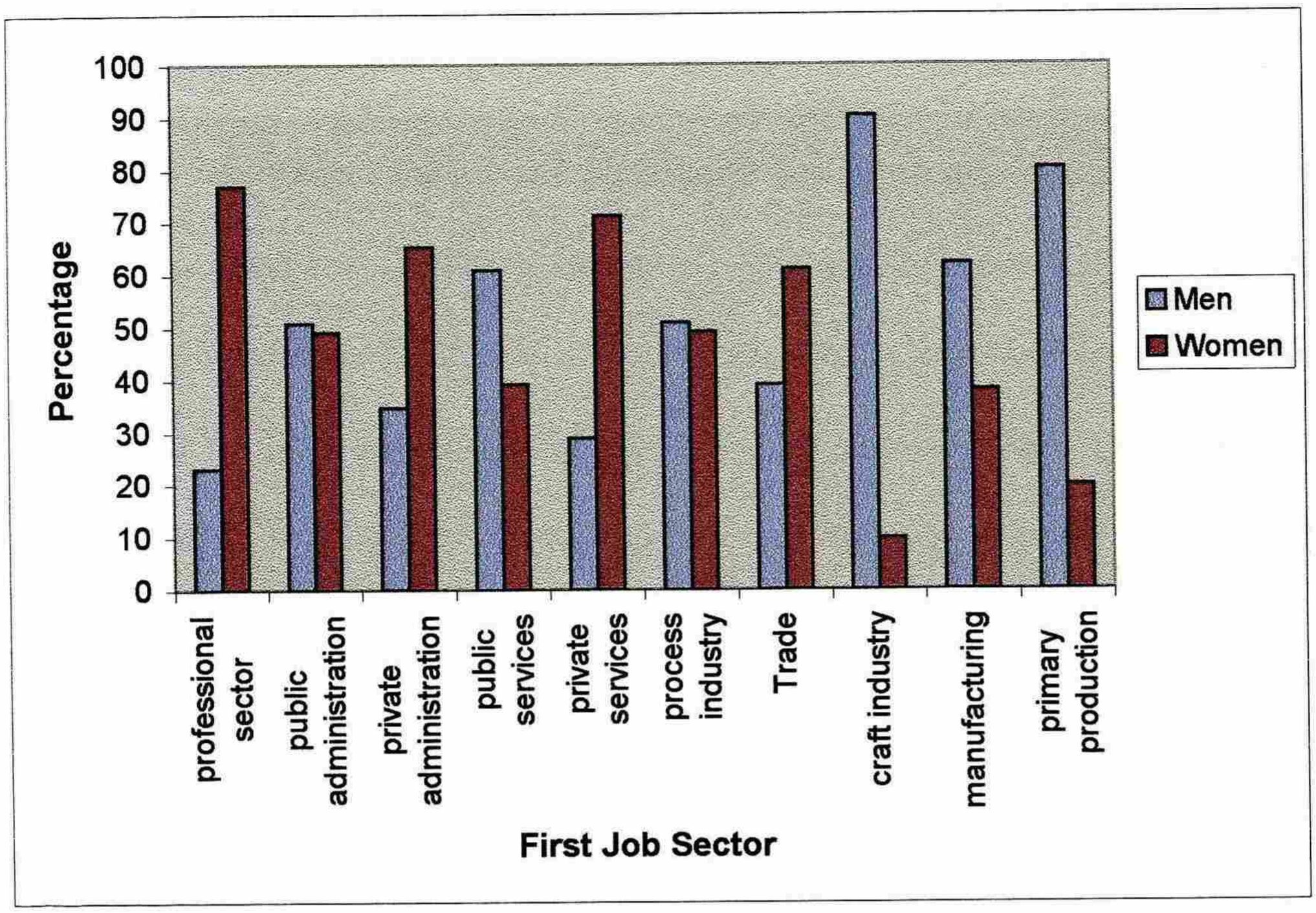
Methods of job search (variable N4219)

Information on the methods used by respondents in obtaining their first jobs was collected in the Sweep IV survey. The various sources of gaining first job information identified in the NCSD included advertisement, job centre, careers office, and private agency. I recode these as 'formal channels'. On the other hand, friends, 'approaching employers' and 'previously worked for the company' are defined as 'informal channels'. Again, this variable is recoded into a dummy variable where 1 represents formal channels and 0 represents informal channels.

In the next section, I first look at the distribution of respondents' first jobs across industrial sectors by gender and qualifications; and at the relationship between methods of job search, sector and qualifications. This is followed by multivariate analysis of respondents' first job attainment. From the data it can be established that some respondents started their first job before completing full-time education. In order to avoid confusion about the direction of causality (i.e. the effect of qualifications on first job attainment), the analysis in this chapter is restricted to those who obtained their first job after leaving full-time education.

Research on occupational segregation has documented that many more women are found in certain occupations such as secretarial work, nursing and teaching professions whilst men are over-represented in skilled manual and professional work (Hakim, 1979). Others have suggested another dimension of gender segregation - industrial sector (Heath and Ridge, 1987); women are largely concentrated in sectors such as administrative bureaucracies, retailing, hotel and catering, domestic and personal services. The NCDS cohort's experience appears to be consistent with these observations. See Figure 5.1 for the details.

Figure 5.1: Gender by First Job Industrial Sector



Sample: All respondents, NCDS4 (N = 12052).

As we can see, the professional sector, private administration, private service and trade are predominantly female-dominated sectors. On the other hand, a much higher percentage of men is found in public service, craft industry, traditional manufacturing and primary production.

In the professional sector where education and research, medical and health services, and private consultant organisations are found, we expect to see a high proportion of female workers such as teachers, nurses or clerks and secretaries. Likewise, in private administration, large numbers of routine non-manual jobs, which are traditionally characterised by a high concentration of female workers, are also to be found. Moreover, large numbers of women workers such as sales and shop assistants may also be found in private services and trade, where the latter consists of

wholesaling and retailing industries. In contrast, craft industry, manufacturing and mineral extractive industries require a high proportion of skilled manual workers, who are predominantly male.

The above figure only provides a general view of the distribution of male and female respondents in different industries. To examine how well the NCDS respondents fared in each industrial sector, we can look at their occupation scores by sector using the Hope-Goldthorpe Scale of occupational desirability (Goldthorpe and Hope, 1974).

Table 5.1: Mean Hope-Goldthorpe Score of First Job by gender and sector

Industrial Sector	Men	Standard deviation	N	Women	Standard deviation	N
professional	57.1	14.8	214	53.7	13.4	747
public administration	45.1	13.1	407	41.6	8.0	398
private administration	50.4	16.7	435	41.1	7.3	824
public services	40.7	12.7	270	36.8	7.1	175
private services	39.7	15.4	372	36.1	11.1	923
process industry	38.9	13.2	532	38.8	7.6	521
trade	37.2	12.0	803	37.0	7.2	1278
craft industry	41.2	10.1	1151	38.2	5.6	126
manufacturing	39.8	11.7	1402	37.9	5.7	880
primary production	33.3	7.7	232	34.9	8.1	58
average scores	41.2	13.3	5900	40.1	10.3	5989

Sample: All respondents, NCDS4 (N = 11889)[13]

[13]Note that the number of cases has reduced because of missing data on information of first job scores.

Table 5.1 summarises the means of respondents' Hope-Goldthorpe scores in different industrial sectors by gender. With the exception of the primary sector, the mean scores of the first jobs of men are generally higher than those of women. On average, men only score about one point higher than women do, but in private administration (such as banking, finance and insurance) women are nine points worse off than men are. The differences in mean scores between the two sexes are found to be significant[14] in most sectors, except in the process, trade and the primary sectors. Moreover, both men and women of the NCDS cohort in the professional sector are reported to have the highest first job scores, where men obtain 57 points and women get 54 points, both being significantly higher than the overall average scores.

However, differences in average job scores are not only influenced by gender but probably more so by qualifications. The difference between sectors may be caused by the fact that some sectors require better qualified people than others. We can find out by a cross-tabular analysis of qualification, gender and sectors.

Figures in Table 5.2 show that there is a distinctly high concentration of degree holders in the professional sector. In addition, more than a fifth of the male respondents in private administration have a degree qualification. This may explain why they get higher occupation scores than women (of whom only about seven per cent got a degree) in this sector. Thus, we can say with some confidence that the higher mean occupation scores in certain industrial sectors are at least partly due to the higher proportion of well-qualified employees. Whether or not individual sectors place a different emphasis on formal qualification is a question that I shall return to in the next chapter.

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[14] A test of significance is conducted using the independent-samples T-Test procedure.

Table 5.2: Qualifications by gender and First Job Industrial sectors (row percentage)

Industrial Sector of First Job	Degree	Post A level	A level	O level	CSE, etc.	no qualifications	N
professional	44.1[a]	21.6	16.7	9.7	1.8	6.2	227
	27.4[b]	31.3	11.2	20.8	5.8	3.4	758
public administration	8.9	4.9	25.9	39.8	13.4	7.1	425
	7.9	6.4	23.2	51.2	6.2	5.2	406
private administration	24.8	14.2	29.1	23.9	5.4	2.7	444
	7.2	5.9	16.9	51.1	13.8	5.2	834
public service	6.5	8.6	22.7	36.7	14.4	11.2	278
	6.7	4.5	12.9	45.5	24.2	6.2	178
private service	13.7	8.4	21.3	26.6	16.2	13.9	395
	7.8	7.6	13.8	40.1	18.3	12.3	957
process industry	12.6	8.3	23.1	24.1	12.6	19.3	555
	7.1	5.6	8.6	31.6	21.5	25.6	535
trade	6.6	4.1	15.4	31.4	20.3	22.3	838
	4.6	6.2	7.2	35.7	24.4	21.9	1325
craft industry	3.3	7.0	25.9	31.2	17.4	15.2	1172
	5.5	3.9	7.1	45.7	22.8	15.0	127
manufacturing	5.9	8.8	20.6	27.6	16.8	20.4	1450
	3.7	3.4	4.0	32.8	21.2	34.9	891
primary production	6.6	5.8	17.7	26.7	16.0	27.2	243
	6.8	5.1	15.3	27.1	20.3	25.4	59
average percentage	9.7	8.2	22.0	28.7	15.2	16.2	6027
	8.7	8.9	11.1	37.3	17.6	16.3	6070

Sample: All respondents, NCDS4, (N =12049). [a] male, [b] female.
Chi-square (men) = 354.67, d. f. = 45, $p < .000$;
Chi-square (women) = 1731, d. f. = 45, $p < .000$.

As was discussed earlier, large establishments and public sector organisations are expected to be more inclined to rely on formal recruitment channels, and often stipulate a minimum requirement for certain levels of qualification. The use of formal channels for getting first jobs may reflect the meritocratic nature of the recruitment procedure of the employers to some extent. That is to say, the more employers in a particular industrial sector use formal channels for recruitment, the more 'meritocratic' this sector is. We can examine the relationship between the use of formal methods of job search by qualification in different sectors using a three-way table. The results are shown in Table 5.3.

Table 5.3 Percentage of respondents using formal channels of job search by qualification and industrial sector

Industrial Sector of First Job	Degree	Post A level	A level	O level	CSE, etc.	no qualifications	Average %
professional	76.9	68.3	75.6	76.8	72.9	61.5	73.4
public administration	73.9	68.1	79.0	73.0	61.0	64.0	72.5
private administration	77.8	73.8	77.7	77.1	78.3	78.2	77.3
public service	79.3	75.0	58.8	64.5	61.4	45.0	62.8
private service	57.6	61.0	55.5	58.3	47.0	47.3	54.6
process industry	69.8	71.1	61.8	63.6	57.6	53.5	61.2
trade	64.3	62.3	59.5	62.2	60.9	64.4	62.2
craft industry	63.0	51.7	58.6	58.8	53.1	50.0	56.1
manufacturing	71.1	58.3	58.1	62.5	51.5	54.1	57.8
primary production	52.9	25.0	29.8	43.9	37.0	34.7	37.1
average percentage	71.2	64.3	63.6	65.0	57.0	55.7	62.4

Sample: All respondents, NCDS4, (N =12049). Chi-square = 354.67, d. f. = 9, $p < .000$

In general, the impression is that sectors with higher levels of qualifications are more often found to involve formal channels of job search. The percentages using formal channels are also particularly high in the professional and the two administrative sectors. These findings to some extent support the assumption that large bureaucracies and public organisations are more likely to use formal recruitment channels and therefore can be regarded as more meritocratic.

Based on the above discussion, a number of hypotheses can be developed. First, industrial sectors are expected to offer opportunities at different levels to respondents in their first jobs. Second, qualifications are expected to play an important role in first job attainment. Third, large firms are expected to have a positive effect on occupational attainment. Fourth, the use of formal channels to get first jobs is also expected to be positively associated with occupational attainment.

Although the focus of this chapter is the effect of structural factors (industrial sectors and firm size) on recruitment, the primary concern is to establish the most

important factors in the occupational attainment process. Do ascribed characteristics such as social and cultural backgrounds continue to be important, as they were for obtaining a degree? How important are the roles of scores of general ability and school type in the recruitment process? This will allow us to establish the extent to which social and cultural reproduction applies to the NCDS cohort. More importantly, this enables us to establish the net effects of the structural factors.

The rest of this chapter is divided into two parts. In the first part, multivariate analysis is conducted to examine the effects of qualifications and industrial sector on the first job occupation scores of *all* respondents. The second part is restricted to graduate-only models and includes degree subjects as well as level of qualification. As we have discussed earlier, gender segregation in the labour market not only exists in different types of occupation, but also between industrial sectors. These gender differences are likely to bear on the attainment process. All analyses in this chapter are therefore carried out separately for men and women.

Qualifications and Recruitment - all cohort members

I begin with the multivariate analysis to ascertain the net effects of structural factors such as firm size and industrial sector on respondents' first job attainment, controlling for variables measuring background, cultural capital, ability and school type, as well as qualifications. The results are presented in Tables 5.4.1 and 5.4.2.

Let us first look at the men of the NCDS cohort. The first model contains only parental variables such as social origins, parental education and parental cultural capital. Whilst both parental education and parental cultural capital are measured on a continuous scale, the base category for social origins is semi-skilled and unskilled

manual backgrounds. We have already seen in Chapter Three that both social and cultural backgrounds have significant effects on respondents' education.

The results in Table 5.4.1 show that all three background variables continue to have significant effects on first job attainment. Broadly speaking, the higher the social origin, the more likely that the respondents will get higher occupation scores in their first jobs. As we can see, a professional background for men is found to benefit their job scores by more than 7 points, 1.5 points more than the scores of their peers from entrepreneurial and managerial backgrounds. Parental education is also shown to be positively related to first job occupation scores. Perhaps the most unexpected finding is the highly significant effect of parental cultural capital on first job attainment, even net of the effects of social origins and parental education. This suggests that the effects of the cultural capital that respondents 'inherit' at home have a more far-reaching effect than is often assumed.

Table 5.4.1: Regression of First Jobs' Hope Goldthorpe Scores - male respondents

	Model 1	Model 2	Model 3	Model 4
Constant	**32.6 (.7)**	**26.2 (1.2)**	**29.2 (1.2)**	**22.6 (1.5)**
Social Origins (base: semi/ unskilled manual)				
employers & managers	**6.0 (.7)**	**4.0 (.8)**	**3.0 (.8)**	**3.1 (.8)**
professionals	**7.5 (1.1)**	**5.1 (1.3)**	**3.9 (1.2)**	**2.5 (1.2)**
semi-professionals	**6.5 (.9)**	**4.7 (1.1)**	**3.2 (1.0)**	**2.7 (1.0)**
Routine non-manual	**4.4 (.9)**	**2.8 (1.0)**	2.0 (1.0)	1.4 (.9)
own account	**3.5 (.9)**	**3.4 (1.0)**	**2.8 (1.0)**	**3.2 (1.0)**
manual foremen	**4.1 (.8)**	**3.7 (.9)**	**3.0 (.8)**	**2.6 (.8)**
skilled manual	**2.4 (.6)**	**2.0 (.7)**	**1.5 (.6)**	**1.2 (.6)**
Parental education	**.7 (.1)**	**.6 (.2)**	.2 (.2)	.2 (.2)
Parent's cultural capital	**.4 (.1)**	.1 (.1)	.0 (.1)	.0 (.1)
Ability at 11		**.2 (.0)**	**.1 (.0)**	**.1 (.0)**
Respondents' cultural activities at 11:				
art		.1 (.2)	-.2 (.2)	-.3 (.2)
reading		**.4 (.2)**	.2 (.1)	.2 (.1)
Schools (base: comprehensive)				
grammar		**2.9 (.8)**	.9 (.7)	.3 (.8)
direct grant/ independent		**3.1 (1.2)**	.2 (1.1)	.2 (1.1)
secondary modern, etc.		-.2 (.6)	.3 (.5)	.2 (.5)
Qualifications (base: no qualifications)				
degree			**21.8 (1.1)**	**19.2 (1.1)**
post A level			**13.7 (1.0)**	**12.1 (1.0)**
A level			**6.8 (.8)**	**5.9 (.8)**
O level			**5.7 (.8)**	**5.1 (.8)**
CSE, etc.			**2.4 (.8)**	**2.6 (.8)**
Industrial Sectors (base: primary production)				
professional				**14.9 (1.5)**
public administration				**10.6 (1.4)**
private administration				**11.5 (1.4)**
public services				**6.6 (1.5)**
private services				**3.8 (1.4)**
process				**4.8 (1.3)**
trade				**5.2 (1.2)**
craft				**8.3 (1.2)**
manufacturing				**6.8 (1.2)**
Size of establishment				
large firms				**1.3 (.5)**
Methods of getting first job				
formal channels				**1.6 (.4)**
Adjusted R^2	.07	.13	.25	.30
Explained sums of squares	60193.4	73250.1	141764	169025
Degrees of freedom	9	15	20	31
N	4408	3050	3050	2973

Figures in brackets after the unstandardized coefficients give the standard errors. Significant coefficients are shown in bold.

In Model Two, general ability scores, respondents' cultural activities and a series of dummy variables representing school type are introduced. As in previous chapters, the base category of school type is comprehensive schools which most of the

NCDS cohort members attended. Whilst the effects of social origins remain statistically significant, the size of the effects are somewhat reduced. Ability scores at age 11 have a major effect on first job attainment, which is consistent with past research findings.[15]

The type of school respondents attended also has significant effects on first job attainment. Selective schooling is shown to have a positive effect on first job scores. As was discussed elsewhere, the type of school the NCDS cohort members attended is perhaps just a reflection of the different ability levels of the pupils. Selection for grammar schools was essentially meritocratic, where pupils were selected on the basis of the entrance examination (the '11-plus') (Heath and Cheung, 1997). Thus we expect the school effect to be insignificant having controlled for ability. The results, nevertheless, suggest that there is a strong net effect of selective school on first job attainment even after controlling for ability.

Although respondents' 'beaux arts' cultural activities at age 11 are not significant, reading activities help respondents obtain higher first job attainment. It should be noted that the introduction of these two cultural variables has reduced the effect of parental cultural capital to non-significance. This may be because the effect of school type and children's cultural activities have mediated the influence of parental cultural capital.

In the third model, the introduction of the level of qualifications is shown to bring a considerable improvement in the variance explained by the model. The fit improves substantially from 13 to 25 per cent. As we expected, qualification has a

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[15] In his study of the occupations of the NCDS cohort, Saunders (1995) found that ability is highly significant in determining job attainment. Others also found similar results. See Heath and Cheung (1997).

large and highly significant effect on first job attainment. When compared to respondents with no qualification, a degree qualification brings a 22-point advantage on a male cohort member's first job scores. Post A level qualifications such as HNC, HND, teaching and nursing qualifications are also found to benefit the job scores by nearly 14 points. At the lower end of the scale, it is evident that CSE qualification does not add much to first job scores when compared to those without any qualifications.

The introduction of qualifications reduces the school effects on first job attainment to non-significant. It also leads to a modest reduction in the size of the origin effects. The effect of general ability scores is also reduced to a much greater extent. As was pointed out elsewhere, this result is perhaps not surprising as measures of ability and British school examinations are largely measuring the same kinds of cognitive skills (Heath and Cheung, 1997).

Finally in the fourth model, dummies are introduced to represent the ten industrial sectors of respondents' first jobs, with primary production as the base category. Moreover, the size of establishment and methods of getting the first jobs are also added to the model. The Hope-Goldthorpe scores of respondents' first jobs are found to be highly diverse between sectors, even after the levels of qualification are controlled.

In primary production the scores are predicted to be the lowest among all industrial sectors and the differences are all statistically significant. Respondents who got their first job in the professional sector, which consists of medical and health services, education and research, and private consultant organisations are predicted to have a 15 point advantage in their job scores. The effect of the professional sector is

found to be strongest among all industrial sectors. This finding supports the hypothesis that industrial sectors reward individuals at different levels. Those who started their first jobs in the private and public administration also perform well, enjoying an advantage of around 11 points in their occupation scores. On the contrary, respondents who got their first jobs in private service are shown to be only four points better off than their peers in primary production.

The fact that respondents in the professional, public and private administration sectors got higher occupational attainment even controlling for qualifications suggests that some industrial sectors offer substantially different rewards to individuals. In other words, the apparent higher occupational attainment in certain sectors is not a result of simply a higher proportion of qualified employees. This may be due to the requirements of recruits for highly-skilled and knowledge-specific jobs in the professional and administrative sectors, such as doctors, lawyers, pharmacists and accountants.[16] These findings also highlight the inadequacy of the core and periphery concepts of classifying industrial sectors. To be sure, occupational attainment is higher in the professional and the administrative sectors, which are normally classified as core sectors. However, respondents in the process industry, a core production sector according to Kerckhoff, are found to have lower first job attainment than those in the craft and trade industries which he classifies in the peripheral sector.

The size of establishment is also found to be positively related to first job scores. As was discussed earlier, larger firms are associated with more capital intensive investment, better working conditions and higher pay. The result simply confirms the

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[16] Other sectors such as the services and trade may also require equally qualified recruits but the nature of skills required may be less knowledge and skill-specific. Since we know from the analysis in Chapter Four that more job-specific degrees generally lead to higher occupational attainment, it is perhaps not surprising to see this difference in occupational attainment between sectors.

hypothesis that respondents get higher occupational attainment in larger firms. With respect to the method of job search, the result from the final model shows that using formal methods also has a significant although small advantage on recruitment. This supports the hypothesis that formal means of job search gives access to higher level jobs.

The multivariate analysis by and large confirms the results from the cross-tabulation tables. Men who obtained any kind of qualifications, as compared to those who have no qualifications, are significantly better off in their job scores. However, the advantage gained at different levels of qualification is not the same. The advantage is quite small at the lower levels of qualifications, only by two to five points, but those who have post A level and degree qualifications are shown to enjoy substantial advantage in their first job scores, having a 12 point and 19 point benefit respectively.

Overall, the results presented in Table 5.4.1 suggest that education plays an important role in mediating the effect of social origins on class destinations as suggested by previous research (Heath and Clifford, 1990; Heath, Mills and Roberts, 1992; Shavit and Blossfeld, 1993; Kerckhoff, 1993; Heath and Cheung, 1997). More importantly, the above analysis demonstrates substantial differences in the effects of industrial sector on first job attainment, even controlling for social origins and qualifications.

Results for women show a broadly similar picture (See Table 5.4.2). Social origins are found to have significant effects on first job scores, although women from own account and manual foremen origins do not have an advantage over their peers from semi-skilled and unskilled manual backgrounds. Again, parental education and

cultural capital are shown to be positively related to women's first job scores. In model two, the type of school shows a significant large effect on first job scores. Selective schools are shown to have positive effects on their first job scores, while secondary modern schools have a reverse effect, even after controlling for general ability scores at age 11. Unlike men, whose reading activities are shown to have positive effects on first job attainment, women's cultural activities at age 11 do not make any significant difference to their job scores.

Table 5.4.2: Regression of First Jobs' Hope Goldthorpe Scores - Female respondents

	Model 1	Model 2	Model 3	Model 4
Constant	**33.6 (.5)**	**29.9 (1.0)**	**33.3 (.9)**	**30.1 (1.6)**
Social Origins (base: semi/ unskilled manual)				
employers & managers	**3.6 (.5)**	**2.0 (.6)**	1.0 (.6)	**1.0 (.5)**
professionals	**6.4 (.8)**	**4.4 (.9)**	1.0 (.8)	1.8 (.8)
semi-professionals	**3.1 (.7)**	**2.1 (.8)**	.4 (.7)	.4 (.7)
Routine non-manual	**2.3 (.7)**	**2.1 (.8)**	**1.8 (.7)**	**1.4 (.6)**
own account	.5 (.7)	.4 (.8)	.2 (.8)	.7 (.7)
manual foremen	.8 (.6)	.6 (.7)	.2 (.6)	.4 (.6)
skilled manual	**1.1 (.4)**	.9 (.5)	.8 (.5)	.6 (.4)
Parental education	**.5 (.1)**	.2 (.1)	-.2 (.1)	-.1 (.1)
Parent's cultural capital	**.4 (.1)**	**.3 (.1)**	**.1 (.0)**	**.1 (.0)**
Ability at 11	**.1 (.0)**	**.1 (.0)**	**.1 (.0)**	**.1 (.0)**
Respondents' cultural activities at age 11				
art	-.1 (.2)	-.0 (.2)	-.03 (.15)	
reading	.2 (.1)	-.0 (.1)	-.01 (.09)	
Schools (base: comprehensive)				
grammar	**2.5 (.6)**	.3 (.5)	.2 (.5)	
direct grant/ independent	**4.0 (.9)**	**2.1 (.8)**	.9 (.7)	
secondary modern, etc.	**-1.2 (.4)**	-.5 (.4)	-.4 (.4)	
Qualifications (base: no qualifications)				
degree		**17.2 (.8)**	**12.7 (.8)**	
post A level		**11.2 (.7)**	**6.5 (.7)**	
A level		**3.5 (.7)**	**2.3 (.7)**	
O level		**2.0 (.6)**	**1.6 (.5)**	
CSE, etc.		**1.4 (.6)**	**1.5 (.5)**	
Industrial Sectors (base: primary production)				
professional			**13.6 (1.5)**	
public administration			**3.6 (1.5)**	
private administration			**3.8 (1.5)**	
public services			-.2 (1.6)	
private services			-.5 (1.4)	
process			2.3 (1.5)	
trade			1.6 (1.4)	
craft			2.1 (1.7)	
manufacturing			2.4 (1.5)	
Size of establishment				
large firms			**1.4 (.3)**	
Methods of getting first job				
formal channels				**.6 (.3)**
Adjusted R^2	.08	.13	.29	.43
Explained sums of squares	41300.2	47934.1	105644	150438
Degrees of freedom	9	15	20	31
N	4547	3177	3177	3085

Figures in brackets after the unstandardized coefficients give the standard errors. Significant coefficients are shown in bold.

The level of qualification in model three again shows a positive relationship with first job attainment. Similar to the bivariate analysis, the results show that the advantage is rather small at lower levels of qualification while there is a much bigger benefit at the top. For women, A level or equivalent qualifications only bring a benefit of 4 points. Qualification also erodes the effects of social origins to a certain extent, and some origin effects are even no longer significant. However, the level of attainment is generally lower for women; for instance, degree education only brings a 17-point advantage to their job scores, whereas men gain 21 points. This gap has even widened to 7 points after industrial sectors are introduced in the models. To establish whether there is an overall female disadvantage in first job attainment, we can analyse both men and women in a pooled analysis. Results are found to be significant where women are two points lower than men in their first job scores, indicating that the level of attainment for equally qualified women is lower than that of men.[17]

In model 3, it should also be noted that even when qualification is introduced in the model, the effect of independent school remains statistically significant. However, this does not indicate that the privilege of private education is more resistant to the effect of achieved characteristic for women than for men because in a pooled analysis the interaction effect (not reported) of direct grant and independent school with gender is proved to be insignificant.

In the final model, we can see that the ways in which different industrial sectors reward individuals exhibit a different pattern for women. Apart from the professional, public and private administration sectors, other sectors show no significant differences from the primary sector. Women in the professional sector are

[17] The gender coefficient is –2.3, and the standard error being .3, suggesting the gender effect is highly significant in first job attainment.

predicted to have a 14-point advantage in their job scores, even after controlling for qualifications, while women in public and private administration are only three points better off than their peers in primary production. This again confirms that industrial sectors are not necessarily the same in their rewards to individuals. It is evident that respondents in the professional and administrative sectors obtain higher level occupational attainment. Moreover, these results again show that although those in the so-called 'core' service sector obtain higher level attainment, women from all other industries do not exhibit any significant difference in their first job attainment regardless of whether they belong to the core or peripheral sectors.

Similar to men, having their first jobs in large establishments brings a slight benefit to women's job scores and the use of formal channels again has a significant, although small effect on first job attainment. Note that industrial sector, firm size and methods of job search increase the variance explained by 14 per cent, suggesting that they are important factors in explaining first job attainment and should be given more attention. Perhaps due to the lack of work experience and social networks (such as contacts made through work) of fresh school-leavers and graduates, young people have fewer ways to approach their potential employers, hence the use of formal channels may become a more important means than informal channels in getting their first jobs. In order to compare the effects of qualifications on recruitment between the methods of job search, two regression equations are formulated for respondents who got their first jobs via informal channels and for those who used formal channels (see Table 5.5 for details).[18]

[18] As in the preceding models, social and cultural background, ability ratings, school, sectors and firm size are controlled for.

The findings show a remarkably similar pattern in the effects of qualifications on recruitment between the two different channels of job search, but women who got their first jobs via formal channels are shown to have lower attainment than men, although the difference is not likely to be significant.[19] Since the effects of qualifications on recruitment do not vary between the two types of channels of job search, we cannot conclude that the use of formal channels in job search is associated with more meritocratic recruitment practices of the organisations involved.

Table 5.5 Effects of Qualifications on HG scores in First Job and Methods of Job Search

	Formal Channels	Informal Channels
Constant	**27.8 (1.9)**	**26.4 (1.1)**
Qualifications (base category: no qualification)		
Degree	**16.9 (.9)**	**15.3 (.9)**
Post A level	**10.3 (.9)**	**8.7 (.7)**
A level	**3.9 (.7)**	**4.9 (.6)**
O level	**3.7 (.6)**	**2.7 (.6)**
CSE, etc.	**2.2 (.7)**	**1.7 (.6)**
Female	**-2.7 (.4)**	**-1.5 (.4)**
Adjusted R^2	.37	.32
N	3040	3921

Sample: All respondents who started their first job after completing full-time education, N = 6961. Figures in brackets after the unstandardized coefficients give the standard errors. Significant coefficients are shown in bold.

We have seen that industrial sectors have a direct independent effect on first job attainment, net of the influence of qualification. To what extent does this apply to the graduate labour market? Will the variation in the level of attainment of individuals between sectors become smaller after degree subjects are taken into account?

[19] Formal test of significance suggests that this gender difference in recruitment does not vary significantly between different methods of job search.

First job attainment of graduates

We know from the analysis in Chapter Four that subject specialisation has a major effect on graduates' first job attainment. In this section, the focus of the multivariate analyses is shifted to examine the net effects of industrial sector, controlling for degree subjects. Since the analysis is restricted to degree holders, the number of cases decreases dramatically. Both social origins and sectors are therefore collapsed into fewer categories to avoid the small 'N' problem. As in previous chapters, the social origins of graduates are recoded into three categories: high, middle and low with low social origins being the base category. The ten industrial sectors are collapsed into six categories: (1) professional; (2) public administration; (3) private administration; (4) services (trade, public and private services); (5) process industry; and (6) manufacturing (craft and manufacturing). The primary production sector was removed from the analysis due to extremely small numbers[20]. The service industry is used as the base category in the linear regressions. The subjects of degree are kept as the original nine categories, with Social Science as the base group. As we have already seen the analysis of first job attainment of graduates in Chapter Four, only the final model including industrial sectors is shown here. Table 5.6 reports the findings of the linear regressions for all graduates and then for men and women separately.[21]

The first column in Table 5.6 gives the coefficients of the pooled analysis including both male and female graduates. The second and third give results for men and women separately. Again, the results show distinctive effects of industrial sectors

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[20] Only 16 male graduates and 4 female graduates are found in the primary sector.

[21] As in Chapter Four, earlier models (not reported) controlled for parental education, parental cultural capital, ability, school type and respondents' cultural activities. None of these factors reached statistical significance at the conventional 5% confidence level and were therefore removed from the final analysis.

on first job attainment. The first model shows that male and female graduates do not differ significantly in their first job attainment, indicating that gender, as an ascribed characteristic, does not directly penalise women in occupational attainment, although we have seen that there are indirect penalties. The gender effect is likely to be mediated by subject choice. We know from the analysis in Chapter Three that female students were more likely to choose Education as their degree subject. And as can be seen from the first model, Education graduates suffer lower job scores. However, the effect of another non-meritocratic factor – social origin – remains significant for male graduates but not for women.

Table 5.6: Regression of First Jobs' Hope Goldthorpe Scores - graduates

	All graduates	Men	Women
Constant	**41.1 (1.7)**	**38.5 (2.6)**	**42.4 (2.2)**
Gender	-1.3 (.9)	-	-
Social origins (base: low)			
high	**2.4 (1.0)**	**3.6 (1.5)**	1.0 (1.3)
middle	1.8 (1.3)	2.8 (1.8)	-.3 (1.7)
Degree subjects (base: Social Science)			
Medicine, Law	**11.6 (1.9)**	**11.0 (2.7)**	**12.7 (2.9)**
Engineering, Technology	1.9 (1.9)	-.19 (2.5)	**8.4 (4.0)**
Science	-2.1 (1.6)	-4.3 (2.3)	1.7 (2.3)
Accounting, Administration	3.0 (1.9)	2.6 (2.6)	3.8 (2.8)
Humanities	-2.4 (1.6)	-1.9 (2.9)	-1.5 (1.9)
Creative Arts	-2.8 (2.5)	-5.8 (4.2)	.2 (3.1)
Education	**-3.1 (1.6)**	-5.1 (3.0)	-1.4 (2.0)
Vocational	**3.2 (1.6)**	4.6 (2.8)	2.9 (2.2)
Industrial Sectors (base: services)			
professional	**5.9 (1.3)**	**8.4 (2.2)**	**4.5 (1.6)**
public administration	**4.5 (1.9)**	**6.9 (3.1)**	2.0 (2.5)
private administration	**9.9 (1.3)**	**11.6 (1.9)**	**7.5 (1.9)**
process	-.9 (1.6)	.1 (2.3)	-1. (2.3)
manufacturing	.9 (1.4)	3.7 (2.0)	-2.7 (2.3)
Size of establishment			
large firms	**4.9 (.9)**	**6.2 (1.4)**	**3.8 (1.1)**
Methods of getting first job			
formal channels	.6 (.8)	.7 (1.3)	.2 (1.1)
Related occupation	**14.1 (1.0)**	**14.5 (1.4)**	**13.2 (1.5)**
Adjusted R^2	.40	.40	.38
Explained sums of squares	96584	56656	40035
Degrees of freedom	19	18	18
N	921	462	458

Figures in brackets after the unstandardized coefficients give the standard errors.
Significant coefficients are shown in bold.

Both male and female graduates in Medicine and Law are significantly better off when compared to those who studied Social Science. In general, as can be seen from the pooled analysis, graduates with degrees in Education are worse off. In contrast, those with degree in miscellaneous vocational subjects are doing rather well. Women with degrees in Engineering and Technology – a subject traditionally dominated by males – also benefit in their first job attainment. These results again confirm the findings in Chapter Four on the differential labour market outcomes of subject specialisation at degree level.

With respect to the effect of industrial sectors, similar to the findings for all cohort members, the job scores in the administrative and the professional sectors are significantly higher for both male and female graduates, when compared to their counterparts in the service sectors. The differences in the levels of rewards in different industrial sectors among graduates are however smaller than those among all respondents. It is likely that subject choice has reduced the sectoral difference in first job scores. Moreover, when we compare the coefficients for men and women, these sectors appear to reward male graduates more than women. For example, men score 8 points more in the professional sector as compared to four points for female graduates. Similarly, men score around four points higher than women in both administrative sectors. On the whole, there is no substantial difference between male and female graduates in their first job attainment although there may be some underlying differences between industrial sectors. The next questions to be addressed should be how different are the effects of qualifications in each industrial sector? Does this vary by gender? I shall return to these questions in the next chapter.

Finally, the size of establishment is positively related to first job attainment for graduates, but the use of formal channels is not. In other words, job search method has no relationship with first job attainment of graduates. This is a rather intriguing result since the bivariate analysis shows that the use of formal channels in the job search prevails among the more qualified respondents. One possibility is that in some disciplines, graduates are required to obtain fieldwork experience or some form of internship. Examples of these are lawyers, social workers and journalists. The potential employers may already know graduates in these disciplines and consequently the use of formal channels in getting their first jobs may become less important. Unfortunately the NCDS data do not allow further investigation of this.

Perhaps the large effect of related occupation needs more discussion. As I have argued in the previous chapter, graduates with a job-specific degree may not necessarily get a job in a related field, particularly when the labour market conditions are unfavourable. As was also discussed in the last chapter, the vocational relevance of training is particularly important in the early career, and its effect is likely to become less important in subsequent jobs. A related occupation can immediately benefit from the skills and knowledge that graduates acquired through degree education. However, the highly specific skills and knowledge may lose their relevance due to technological changes over time. It is also likely that other personal characteristics such as age, work experience and length of employment will become more important over the course of an individual's work life. So the effect of a related occupation is predicted to be much smaller in promotion. This is a question I shall return to in Chapter Seven where I investigate the respondents' job promotions in 1991.

Summary and Conclusion

The results from the analyses of this chapter suggest that not only is the level of qualifications important in first job attainment, but also that structural factors in the labour market such as firm size and the industrial sector of first jobs have important parts to play.

The results are mainly consistent with previous research. The direct influence of social origin still persists in respondents' first job attainment, and more so for men than for women, and women are disadvantaged by lower first job attainment. Despite all this, formal qualification remains the most powerful predictor of first job scores. It is clear that the slope is much steeper at the higher end of the qualification ladder, indicating that the effects of qualifications do not operate to the same extent at different levels of education. The role of cultural capital remains important for women in their first job attainment, but for men this effect is mediated by formal qualifications. Overall, there are still some signs of cultural reproduction taking place in the occupational attainment process of the NCDS cohort.

The separate analysis of the NCDS graduates further suggests that there is an association between subject choice and the varying levels of rewards that different industrial sectors offer. Graduates in the professional and the administrative sectors are better off than their peers in the service sectors. The differences between sectors among graduates are, however, smaller than those among all respondents.

The fact that industrial sector and firm size are both significant factors in explaining the levels of individuals' first job attainment also confirms previous research findings. Respondents who started their first jobs in large organisations and in the professional, public and private administrative sectors were rewarded with

higher level jobs. However, in order to explore the extent to which meritocracy (that is, the relationship between education and occupation) varies in different industrial sectors, separate analysis for each sector is required. By doing so, we can compare the effects of formal qualifications in each individual sector, and so establish which sectors are the most meritocratic in their recruitment practice. In the next chapter, I shall attempt to answer this question by examining the difference in the emphasis employers place on formal qualification in different industrial sectors.

Chapter Six

Sectoral Difference in Meritocracy - Recruitment

We have already established in the last chapter that structural factors such as industrial sector and firm size offer different levels of occupational attainment to individuals. Respondents of the NCDS cohort are found to obtain higher occupational attainment in the professional, public and private administrative sectors and in large establishments. However, we still do not know how much emphasis employers in different industrial sectors and in establishments of different sizes place on formal qualifications in recruiting staff. This chapter aims to reveal the more complicated patterns of the relationship between qualifications and recruitment in different industrial sectors, and in large and small firms. The key question this chapter attempts to answer is therefore: is the attainment process a uniform one in which qualifications have the same effect in all sectors of the economy? In other words, this chapter deals with the interaction between qualification, sector and first job attainment, and that between qualifications, firm size and recruitment in order to establish the extent to which industrial sectors and large and small establishments are different in their degree of meritocracy.

Following this introductory section, this chapter is then divided into three parts. Part one deals with sectoral differences by comparing the effect of formal qualifications on first job scores using separate models for each sector. Part two disaggregates the analysis by firm size; as with industrial sector, separate models are run to compare the qualification/job slope between large and small organisations. In part three, the analysis will look at the occupational attainment of men and women in different industrial sectors. In the first two parts, initial analyses include all NCDS

cohort members. These are followed by graduates-only models in order to assess the effects of subject specialisation in different industrial sectors.

Although I have discussed the reasons why there might be different degrees of meritocracy in individual industrial sectors in Chapter One, it is important to recapitulate some of the main ideas here. There is a general belief among sociologists that the decline in traditional small-scale family farms and family businesses and the expansion of large-scale bureaucracies have led to a decrease in the number of inheritable positions (Lipset and Bendix, 1959). This means that it will be more difficult to transmit social positions directly to the next generation in large-scale bureaucracies than it is in small-scale family businesses. In short, there may be a varying degree of ascription between different industrial sectors in the economy. Thus, we expect organisations from different industrial sectors to adopt different recruitment practices. For instance, it is likely that in the public administration sector, recruitment procedures will be highly bureaucratic, formal, universal and impersonal; qualifications (achieved characteristics) will therefore play an important role when employing new recruits. This is the sector where we expect meritocracy to be most developed. Farming and retailing industries, on the contrary, are dominated by small-scale family business, where skills and capitals are transmitted predominantly through family and social networks. Appointments in these sectors may not rely so much on qualifications, but rather on ascribed characteristics such as membership of the family or social network. Therefore, we can hypothesise that meritocracy will be more developed in public administrative sectors than in traditional trade and agricultural industries.

With respect to firm size, we have seen in Chapter Five that respondents in

large firms obtained higher occupation scores in large firms, possibly because these organisations offer better paid jobs, better working conditions, and better chances of promotion (Kalleberg and Sorensen 1979). Moreover, it is argued that large firms are prepared to offer more attractive pay and other fringe benefits to maintain the stability of the workforce since employee turnover tends to be more expensive for large firms (Kerckhoff, 1993). However, the question about whether qualifications yield higher return in large firms awaits empirical investigation.

Bureaucracies are often associated with large-scale organisations. Similar to bureaucratic organisations, large organisations are also characterised by a formal set of rules governing operations and activities which co-ordinate behaviour in a predictable, uniform and impersonal fashion (Kerr, 1960; Blau and Duncan, 1972). Since large organisations share highly similar characteristics to bureaucracies, we therefore expect higher returns to formal qualifications to be found in large rather than small organisations.

To start our investigation, Table 6.1 reports in detail the mean Hope-Goldthorpe scores for first jobs in different industrial sectors by gender and qualification. Two rows of mean scores are given for each sector, representing the mean job scores of men with different levels of qualifications (the first row) and those of women (the second row).

Table 6.1: Hope-Goldthorpe Score of First Job by gender, qualification and sector

Industrial Sector	No qualification	CSE, etc.	O level	A level	Post-A level	Degree	N	Slope[1]
Professional	35[a]	49	44	52	59	65	214	30
	38[b]	40	46	48	58	61	747	23
Public administration	35	38	47	45	49	55	407	20
	39	39	41	41	42	50	398	11
Private administration	33	40	43	46	54	66	435	33
	39	40	40	41	42	57	824	18
Public services	31	33	41	44	49	45	270	14
	34	35	37	37	35	46	175	12
Private services	35	35	38	40	40	51	372	16
	31	35	35	39	36	48	923	17
Process industry	30	34	38	41	50	54	532	24
	36	38	39	41	40	51	521	15
Trade	32	36	39	40	39	50	803	18
	35	36	37	39	38	51	1278	16
Craft industry	36	39	41	43	45	57	1151	21
	34	37	39	39	40	48	126	14
Manufacturing	33	36	40	42	48	57	1402	24
	36	37	39	43	41	48	880	12
Primary production	32	33	34	33	34	40	232	8
	34	33	36	35	30	44	58	10
Average score	33	36	40	43	49	58	5900	25
	32	37	39	41	48	55	5989	23

Sample: All respondents, NCDS4, (N = 11889). [a] male, [b] female

The general relationship between qualifications and first job appears to be a linear one: higher levels of qualification generally lead to higher occupation scores in all industrial sectors. And women, except those without formal qualifications, tend to score lower than men do at most levels of qualifications across sectors.

It can be observed that most of the slopes at lower levels of qualifications (i.e. from no qualifications, CSE or equivalent to O level or equivalent) are fairly flat. This indicates that the O level qualification adds very little to the occupational scores when compared to CSE level or no qualifications at all. Examples of this can be found in sectors such as private services, process industry, trade, manufacturing as well as primary production. There are exceptions, however. In sectors like the professional,

[1] This column gives the difference of the mean scores between respondents with degree qualifications and those with no qualifications.

public services, public and private administration, O level qualification brings larger increases to the occupation scores. And this increase is much sharper for men than for women.

In contrast, a different pattern emerges at higher levels of qualifications. We can see from the above table that the slopes become much steeper at higher levels, suggesting that the occupational rewards are much higher for the better qualified. The job scores of respondents with degree qualifications are substantially higher than those of their peers with A level qualifications - an average advantage of 9 points for men and 7 points for women. This phenomenon is more pronounced in the professional sector, private administration, process and the craft industries.

From Table 6.1, we also see major sectoral differences in the HG scores that respondents obtained at different levels of qualification. Degree holders generally obtained higher occupation increments in the professional and the two administrative sectors. Likewise, women with A level qualifications gained 48 points in the professional sector, compared to 39 in the trade industry.

So to what extent do the effects of qualifications on first job attainment vary between industrial sectors and between organisations of different sizes, controlling for non-meritocratic factors such as social class and gender? A number of hypotheses can be developed for formal testing:

1. The effects of formal qualifications are expected to be largest in the professional and public administrative sectors where recruitment procedures tend to be formal and impersonal. In contrast, this effect is expected to be weaker in sectors such as private services, primary production and industrial production. In other words, we expect the slopes to be different, representing the different degrees of meritocracy.

2. As large organisations are often more bureaucratised, we expect them to be more meritocratic. In other words, formal qualifications are also expected to have a larger effect on first job scores in large rather than small organisations.
3. Regarding gender difference, we also expect that the occupational returns for men and women are more equal in large organisations than in small ones.
4. Similarly, if the more bureaucratised sectors such as the administrative and professional sectors have a more developed meritocracy, equally qualified men and women are expected to be have the same level of occupational attainment in the these sectors.
5. We have seen in Chapter Four that graduates who entered occupations that were related to their degree subjects obtained higher first job scores. Since different industrial sectors may require different specific skills and knowledge, we expect the effects of degree subject to vary between industrial sectors. For example, graduates with degrees in Accounting, Business and Finance are expected to gain a substantial advantage in the private administrative sector. Similarly, graduates with degrees in Administration and Management are also hypothesised to gain higher job scores in the professional and public administrative sectors.

1. Sectoral Difference

Multivariate analysis is conducted to model the effects of both ascribed and achieved characteristics on recruitment in each industrial sector and for men and women. All variables in the previous analyses are included.[2] However, since the main theme of this chapter is to assess the effects of formal qualifications (achieved characteristic) and social origins and gender (ascribed characteristic) on recruitment in different industrial sectors, only the relevant coefficients are reported. The base category in the models represents respondents with no qualifications from semi-skilled or unskilled manual backgrounds. Models are run separately for men and women and the results are presented in Tables 6.2.1 and 6.2.2 respectively.

[2] Other variables included in the analysis but not reported in the tables include parental education, respondents' ability, school type, respondents' cultural activities at age 11 and parental cultural capital but these were found to be insignificant and so were removed from the final analysis.

Table 6.2.1: Effects of Qualifications on first job scores by sector – all male respondents

	professional	public administration	private administration	public services	private services	process industry	trade	craft industry	manufacturing	primary production
Constant	**28.3 (8.3)**	**32.3 (6.2)**	**27.8 (8.1)**	**19.7 (5.6)**	**19.1 (7.8)**	**30.1 (3.9)**	**32.4 (3.1)**	**31.9 (2.2)**	**27.2 (2.3)**	**29.5 (2.4)**
Qualifications:										
degree	**26.3 (6.92)**	**20.8 (6.1)**	**31.7 (5.8)**	**19.9 (5.8)**	7.6 (5.9)	**18.3 (3.7)**	**17.6 (3.7)**	**11.5 (2.8)**	**21.8 (2.4)**	5.9 (3.2)
post-A level	**21.6 (6.6)**	10.2 (5.9)	**24.7 (5.9)**	**18.2 (4.4)**	2.9 (6.4)	**21.2 (3.4)**	**9.2 (3.6)**	**5.7 (1.9)**	**12.5 (1.7)**	-.4 (2.6)
A level	**14.1 (7.0)**	8.3 (4.5)	**11.6 (5.7)**	**12.4 (4.2)**	7.0 (5.1)	**7.6 (2.4)**	**7.6 (2.2)**	**3.9 (1.4)**	**6.6 (1.5)**	.2 (1.8)
O level	8.2 (7.1)	**11.3 (4.2)**	10.5 (5.6)	**13.0 (3.8)**	.2 (5.0)	**5.8 (2.4)**	**5.5 (1.9)**	**2.8 (1.3)**	**5.3 (1.4)**	.9 (1.7)
CSE, etc.	13.6 (9.8)	3.1 (4.8)	10.4 (7.0)	2.5 (4.0)	5.5 (5.1)	3.2 (2.6)	2.7 (1.9)	1.3 (1.4)	2.4 (1.4)	-.3 (1.6)
Social origins:										
employers & managers	n. s.	**7.31 (3.1)**	n. s.	n. s.	n. s.	**5.5 (2.5)**	n. s.	n. s.	n. s.	n. s.
professionals	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.
semi-professionals	n. s.	n. s.	n. s.	**8.9 (3.6)**	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.
routine non-manual	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.
own account	n. s.	n. s.	n. s.	**13.8 (6.1)**	n. s.	n. s.	n. s.	**5.7 (1.6)**	n. s.	n. s.
manual foremen	n. s.	n. s.	n. s.	**7.5 (3.7)**	n. s.	**6.5 (2.7)**	n. s.	n. s.	n. s.	n. s.
skilled manual	n. s.	n. s.	n. s.	**7.5 (2.8)**	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.
Adjusted R^2	.32	.11	.32	.27	.11	.33	.07	.14	.28	.12
N	130	219	230	147	166	258	393	627	682	112

Figures in brackets after the unstandardized coefficients give the standard errors. Significant coefficients are shown in bold. Non-significant coefficients (except qualifications) are denoted as 'n. s'.

Table 6.2.2: Effects of Qualifications on first job scores by sector – all female respondents

	professional	public administration	private administration	public services	private services	process industry	trade	craft industry	manufacturing	primary production
Constant	**35.4 (4.3)**	**32.3 (6.2)**	**39.0 (2.3)**	**25.6 (6.5)**	**30.6 (3.2)**	**30.7 (1.5)**	**32.5 (3.4)**	**34.4 (2.7)**	**33.6 (1.5)**	**24.1 (8.4)**
Qualifications:										
Degree	**11.4 (3.6)**	**10.1 (3.1)**	**16.3 (1.6)**	**20.7 (5.3)**	**15.29 (2.86)**	**11.2 (1.6)**	**14.0 (3.9)**	**12.3 (2.4)**	**11.2 (1.7)**	-9.0 (11.0)
post-A level	**9.1 (3.4)**	2.6 (2.9)	**3.3 (1.6)**	.1 (5.9)	4.24 (2.64)	**3.2 (1.3)**	7.0 (3.9)	**5.8 (2.4)**	**4.9 (1.3)**	12.1 (8.2)
A level	.4 (3.8)	1.0 (2.3)	.5 (1.4)	5.5 (4.2)	**5.83 (2.30)**	**2.5 (1.2)**	5.7 (3.1)	3.3 (2.)	**4.9 (1.3)**	-6.5 (4.7)
O level	.6 (3.5)	2.3 (2.2)	.0 (1.2)	6.0 (3.7)	3.10 (1.91)	1.2 (.8)	**5.4 (2.0)**	1.9 (1.5)	1.1 (.7)	-1.3 (4.7)
CSE, etc.	-4.6 (3.9)	1.6 (2.8)	.8 (1.4)	5.4 (3.8)	3.07 (2.03)	1.3 (.8)	2.4 (2.1)	2.6 (1.4)	.9 (.7)	**-9.0 (4.1)**
Social origins:										
employers & managers	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	**14.1 (6.4)**
professionals	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	**36.1 (9.6)**
semi-professionals	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	**13.4 (5.5)**
routine non-manual	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.
own account	n. s.	n. s.	**3.6 (1.4)**	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.
manual foremen	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.
skilled manual	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.
Adjusted R^2	.30	.11	.37	.21	.08	.19	.33	.19	.21	.62
N	408	230	447	97	455	650	71	263	454	32

Figures in brackets after the unstandardized coefficients give the standard errors. Significant coefficients are shown in bold. Non-significant coefficients (except qualifications) are denoted as 'n. s'.

From both Tables 6.2.1 and 6.2.2, it is readily noticeable that the effects of qualifications on first job attainment vary significantly between industrial sectors. In private services and primary production sectors, even the most qualified degree holders do not enjoy any significant occupational advantage over their peers who have no qualifications. However, the qualified men, as Table 6.2.1 shows, enjoy a much bigger advantage in private administration and the professional sector. The qualification/job slopes are the steepest in these two sectors. A degree qualification brings an advantage of over 31 points in the first job score to male respondents in private administration, and 26 points to those in the professional sector. Those in public administration and the manufacturing sector also enjoy an advantage of 20 to 22 points in their job scores.

Table 6.2.1 also shows remarkable differences in the predicted job scores of respondents with post-A level qualification between sectors. Again, respondents with post-A level qualification in private administration and the professional sectors are both predicted to score 20 points higher than their peers with no qualifications. Respondents in the process industry and public services also obtain job scores that are nearly as high as those of degree holders.[3]

To what extent does the influence of social origins differ between industrial sectors? Social origins in general do not have a significant impact on first job attainment after disaggregation[4]. None of the origin effects are found to be statistically significant in sectors including the professional, private administration, private services, trade and most surprisingly primary production. None the less, the

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[3] Respondents with post-A level qualifications such as HNC, HND or vocational qualifications obtain 3 more points in job scores than their peers with degrees in the process industry. This may be due to the high relevance of their vocational qualifications to their jobs.

[4] The most obvious reason for non-significance after disaggregation is the reduction in the number of cases included in the analysis for each sector.

effect of ascribed characteristic is most notable in public services. Semi-professional, own account, manual foremen and skilled manual backgrounds are all statistically significant in giving an advantage in the first job scores. In the process industry and public administration, respondents from entrepreneurial and managerial backgrounds are found to enjoy advantages of 5 and 7 points respectively in their job scores when compared to their peers from semi-skilled and unskilled manual backgrounds in their own industries. Male respondents who come from own account backgrounds in the craft industry and manual foremen background in the process industry are also significantly better off. Above all, the effects of social origins are rather small as compared to the effects of qualifications on first job attainment and some significant effects would be expected by chance. Moreover, although there is some variation in the effects of social origins between industrial sectors, these variations remain small and there is no systematic pattern that can be drawn.

The results from Table 6.2.2 for female respondents give a rather different picture. Qualified women (i.e. those with degree qualifications) working in public services and private administration enjoy the highest return to their credentials as the slopes of the qualification effects are steepest in these two sectors. In contrast, as we expect, qualification is not a significant factor in determining first job attainment in primary production. Meanwhile, the first job scores of degree holders in the professional and public administrative sectors are no better than those in the craft, process and manufacturing industries. The effect of social origin on women's first job attainment is also found to be largely insignificant in most sectors, except in primary production where we expect a strong ascriptive effect.

To ascertain whether the effects of formal qualifications on first job scores vary significantly across sectors, formal test of significance was carried out. The

results showed that for men, qualifications had significantly stronger effects on first job attainment in the professional, private administrative and process sectors. For women, this effect was found to be stronger in the professional and the craft sectors.[5]

In sum, empirical findings give mixed evidence to hypothesis one in the sense that they appear to apply to men rather more than to women. For the male NCDS cohort members, the professional and administrative sectors are more 'meritocratic' where recruitment relies on formal, standardised and impersonal procedures, whereas qualifications do not appear to be important selection criteria in private services and primary production. In the case of women, it is public services and private administration that appear to be most "meritocratic", where the occupational attainment for equally qualified individuals are highest among all industrial sectors. In other words, employers in these sectors place more emphasis on formal qualifications than those in other sectors. For the NCDS graduates, will the subject of degree help further explain sectoral differences? The next section will focus on graduates only and the subject of their first degrees is introduced to the analysis.

[5] For men, qualifications in all other sectors not mentioned above yield lower job scores by 2 to 5 points, with the lowest in the primary sectors. For female cohort members, qualifications had significantly smaller effects (1-2 points) in all other sectors except in the professional and craft industries.

Table 6.3.1: Effects of Qualifications on first job scores by sector – male graduates

	professional	public administration	private administration	service	process industry	manufacturing
Constant	**53.6 (4.1)**	**29.4 (20.0)**	**49.6 (4.8)**	**35.0 (7.1)**	**44.9 (11.8)**	**35.4 (6.9)**
Degree subject (base category: social science)						
medicine & law	**19.0 (3.6)**	-	**20.6 (7.3)**	**28.2 (6.6)**	-4.5 (13.0)	14.6 (8.6)
engineering & technology	**15.8 (5.6)**	13.8 (7.9)	6.7 (4.6)	4.4 (7.8)	6.2 (10.2)	**18.5 (6.9)**
science	**7.7 (3.2)**	4.9 (10.7)	-1.6 (5.0)	-3.5 (6.4)	4.4 (9.5)	8.9 (7.2)
accounting, management	9.3 (8.9)	-	6.3 (4.0)	11.8 (7.3)	16.1 (16.2)	**15.7 (7.7)**
humanities	-8.9 (5.4)	-4.2 (17.2)	2.2 (5.9)	-2.8 (6.5)	3.51 (13.0)	-2.6 (9.6)
creative arts	3.2 (5.3)	-	**-26.9 (13.6)**	3.9 (10.2)	-3.4 (20.6)	-8.1 (9.1)
education	3.2 (3.3)	10.2 (12.7)	11.6 (13.8)	-5.9 (9.4)	.7 (13.7)	.9 (9.8)
vocational	**14.1 (4.6)**	4.6 (17.0)	7.9 (5.1)	7.7 (7.3)	9.5 (13.5)	**21.5 (11.1)**
Adjusted R^2	.35	.09	.20	.24	-.21	.17
N	86	24	102	97	52	96

Figures in brackets after the unstandardized coefficients give the standard errors. Significant coefficients are shown in bold.
Sample: All male graduates started first job after completing full-time education, NCDS4. Total N = (457).

Table 6.3.2: Effects of Qualifications on first job scores by sector – female graduates

	professional	public administration	private administration	service	process industry	manufacturing
Constant	**56.4 (2.9)**	**55.7 (5.2)**	**37.3 (6.2)**	**43.0 (5.5)**	**22.9 (9.2)**	**43.7 (10.0)**
Degree subject (base category: social science)						
medicine & law	**19.8 (3.4)**	-	**31.8 (15.2)**	**25.3 (6.3)**	14.6 (13.1)	-4.7 (18.7)
Engineering & technology	3.7 (7.9)	10.0 (5.9)	**28.6 (11.4)**	.2 (12.4)	6.5 (13.0)	25.9 (15.2)
science	4.9 (3.0)	**-19.2 (6.5)**	9.3 (6.0)	7.7 (6.5)	**29.7 (6.0)**	9.7 (9.2)
accounting, management	-.6 (7.9)	**-13.5 (5.5)**	**12.1 (6.1)**	**20.2 (10.3)**	**20.6 (7.0)**	15.4 (10.1)
humanities	1.9 (2.8)	**-17.6 (5.6)**	-.9 (6.3)	-1.1 (4.5)	10.9 (6.1)	-8.2 (8.5)
creative arts	-3.8 (4.2)	-8.2 (6.6)	7.0 (9.3)	.9 (10.2)	.7 (9.3)	-5.7 (9.7)
education	4.1 (2.6)	**-20.1 (4.9)**	8.0 (9.3)	.9 (5.4)	2.1 (12.4)	2.6 (9.3)
vocational	2.6 (2.9)	7.5 (5.6)	3.4 (7.3)	4.7 (6.2)	**24.8 (10.8)**	.43 (9.1)
Adjusted R^2	.21	.79	.21	.16	.48	.08
N	194	26	55	112	33	33

Figures in brackets after the unstandardized coefficients give the standard errors. Significant coefficients are shown in bold.
Sample: All female graduates started first job after completing full-time education, NCDS4. Total N = (453).

Graduates' First Job Attainment – Sectoral Difference

We have seen the different occupational outcomes of graduates due to different subject specialisation in Chapter Four. In this section, I shall examine the extent to which these differences vary across industrial sectors. As in the graduate-only models in Chapter Five, the ten industrial sectors are collapsed to six categories and the eight social origins are combined to form three categories due to the drastically reduced number of cases. Separate models for the six combined industrial sectors are run for male and female graduates. The results of the multivariate analysis of graduates' first job attainment in six separate industrial sectors for men and women are presented in Tables 6.3.1 and 6.3.2.[6] The base category in the graduate analysis represents graduates in Social Science from the manual backgrounds who found their first job via formal channels and worked in large organisations.

The effects of degree subjects are found to vary across industrial sectors. For male graduates, whilst subject specialisation on the whole did not make much difference in public administration and the process industries, graduates in Medicine, Law, Dentistry and Pharmacy were much better off in the professional, private administration, and the service sectors. Male graduates in Engineering and Technology, and miscellaneous vocational subjects[7] also had significant advantage over their peers in the base category[8] in the professional and the manufacturing sectors. Rather unexpectedly, graduates trained in Accounting, Business and

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[6] As the multivariate analysis in Chapter Four has already discussed graduates' first job attainment, and the analysis in the previous section has dealt with sectoral difference, only subject specialisation and first job scores will be presented in this section. All models have controlled for social origins, firm size and method of job search in addition to degree subjects.

[7] These include subjects such as Computing, Clerical and Secretarial Studies, Hotel and Catering, Institutional Management, Agriculture and Forestry, etc.

[8] Strictly speaking, the base category represents social scientists in the base categories of all other variables included in the model. For the sake of a more focused discussion of the effect of subject specialisation in different sectors, 'social scientists' are used to refer to the base category in the main text for comparison.

Management did not gain any advantages in either public or private administration. Instead, these graduates were doing better in the manufacturing sector.

As demonstrated in Chapter Four, graduates in Creative Art (a subject with a diffuse link to the labour market) had lower occupational attainment. However, this is not necessarily true in all sectors. Results from Table 6.3.1 show that with the exception of graduates in private administration, those in Creative Arts were not significantly worse off than the social scientists in all other sectors. This may indicate a mismatch of subject specialisation and specific skills and knowledge required in different sectors and this mismatch is most pronounced in private administration.

Broadly similar results are found for female graduates. Women in Medicine and Law also fared well in the professional, private administration and the service sectors. Those in Accounting and Management gained higher job scores in private administration, service and the process industries. In public administration, female social scientists were better off than their peers in Science, Accounting and Management, Humanities and Education. Whilst women engineers and technologists were considerably better off in private administration, female scientists and those with vocational degrees also obtained significantly higher job attainment in the process industry than the female social scientists in the same sector.

To what extent are the different effects of subject specialisation between sectors explained by 'entering related occupations'? The analysis was repeated including the variable 'related occupation' (results not reported). Having jobs in related occupations brought positive effects to male graduates' job scores in all sectors except in public administration. For female graduates, this additional advantage only occurred in the professional, service and manufacturing sectors. However, the

introduction of the variable of 'related occupation' did not reduce the unequal effects of subject specialisation on first job attainment between sectors.

Overall, the effects of degree subjects on job scores vary considerably in different sectors and for both men and women. Although graduates with Business and Finance degrees did not gain higher attainment in private administration, these findings suggest that there is a possible link between subject specialisation and the skills and knowledge required by different sectors of the economy. For example, female scientists obtained higher job attainment in the process industry, when a high level of technology is involved,[9] and male engineers fared better in the manufacturing sectors. Therefore, to a large extent, hypothesis five is supported and we can conclude that degree subject not only influences occupational attainment at labour market entry, but its effect on recruitment also varies between industrial sectors.

The analysis in part one shows that the effects of both the level and the subject of qualifications on first job attainment vary between industrial sector, indicating that the need for disaggregation is justified.

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[9] The process industry includes water, electricity, and gas companies as well as chemical and pharmaceutical companies.

2. Does Size Matter? Disaggregation by Firm Size

We now move on to another dimension of disaggregation. Since large organisations often have a higher level of bureaucratisation, formal qualifications are expected to be the basis of selection or recruitment. We therefore expect to see a bigger effect of qualifications on first job scores. To test the hypothesis whether formal qualifications have bigger effects on first job scores in large organisations, we disaggregate the analysis by firm size. The sample is split into two by firm size for this analysis.[10] Separate regression equations are made for large and small firms.[11] Table 6.4 reports the results.

Table 6.4 Effect of qualification on first job attainment by firm size

	Large Firms	Small Firms
Constant	**27.3 (1.9)**	**27.3 (1.2)**
Qualifications (base category: no qualification)		
Degree	**17.6 (.8)**	**13.7 (1.0)**
Post A level	**11.9 (.7)**	**5.3 (.9)**
A level	**5.0 (.6)**	**3.8 (.7)**
O level	**3.7 (.6)**	**2.2 (.6)**
CSE, etc.	**2.0 (.6)**	**1.5 (.6)**
Female	**-2.2 (.3)**	**-1.5 (.4)**
Adjusted R^2	.39	.25
N	4180	2781

Figures in brackets after the unstandardized coefficients give the standard errors. Significant coefficients are shown in bold.
Sample: All respondents who started their first job after completing full-time education, N = 6961.

The results suggest that firm size does have an effect. In the regressions, the qualification/job slope is rather steeper for large firms than for small firms. Therefore, the findings support hypothesis two that large organisations are more 'meritocratic' than small ones where the occupational returns to formal qualifications is higher. A

[10] Firms with 1 to 24 employees are defined as small and those with 25 or more employees are defined as large firms.
[11] Variables in this model include social origins, cultural capital, sectors and methods of job search.

formal test of significance was carried out. The results showed that qualifications had significantly larger effects on first job scores in large organisations.[12]

Regarding gender difference, female cohort members suffered a bigger disadvantage in large organisations. However, the difference between small and large firms is unlikely to be significant.[13] Therefore, this evidence does not enable us to conclude that large firms treat men and women more equally than small organisations.

3. Gender Difference

Whilst separate analysis for men and women in part one allows us to observe the different status attainment process for the two sexes, we cannot see whether men and women obtain the same first job scores in each individual sector. Also, we expect the more bureaucratic sectors to be more meritocratic in the sense that equally qualified men and women will obtain the same level of occupational attainment. In contrast, in private services or primary production sectors where formal selection process may not prevail, we expect than gender will have a significant effect on first job scores. To show this, a series of combined models are run to assess the effect of gender - another ascribed characteristic - on first job scores in different industrial sectors. Table 6.5.1 summarises the results.

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[12] The coefficients of the top four levels of qualifications were 5.4, 7.4, 1.9 and 1.8, all were significant at .02 confidence level.

[13] The result of a formal test showed that the effect of gender on first job scores did not vary by firm size.

Table 6.5.1 Gender effect on Hope-Goldthorpe Score of first job by Sector

Industrial Sectors	Gender coefficient (standard error)	N
Professional	-2.1 (1.2)	539
Public administration	**-4.7 (1.0)**	450
Private administration	**-5.7 (.8)**	678
Public services	**-5.4 (1.4)**	245
Private services	**-2.4 (1.1)**	622
Process	.1 (.9)	522
Trade	-.6 (.6)	1044
Craft	**-3.7 (1.1)**	699
Manufacturing	-1.0 (.6)	1137
Primary production	**4.5 (1.5)**	145

Figures in brackets after the unstandardized coefficients give the standard errors. Significant coefficients are shown in bold.

At a glance, the negative signs tell us that women are found to be significantly worse off than men in most sectors, controlling for qualifications, social origins and other background variables[14], although in the professional, trade, process and manufacturing sectors, this difference is not significant. Private administration which includes the banking, finance and insurance industries is found to be the least 'universalistic' sector where female respondents are penalised most - by nearly six points in their first job scores - for their gender. Contrary to expectation, equally qualified women are found to have higher occupation scores than men do in primary production. Thus, hypothesis four is rejected - the more bureaucratised sectors are found to be the most 'sexist' industries where equally qualified women are penalised most.

We know from the analysis in Chapter Four that there is no significant overall difference between male and female graduates in their first job scores. This may suggest that the different gender effects in different sectors may disappear for the most qualified. I repeated the above analysis using the graduates only sample and the

[14] All variables in previous analysis ranging from cultural capital, social origins, sectors, methods of job search to school are included here.

effect of gender can be seen in each individual sector. The results are presented in Table 6.5.2. Again, all other variables in previous analyses are included although not reported here.

Table 6.5.2 Gender effect on HG Score of graduates' first job by Sector

Industrial Sectors	Gender coefficient (standard error)	N
Professional	-1.9 (1.0)	277
Public administration	3.6 (3.9)	51
Private administration	**-5.5 (2.3)**	156
Services	2.1 (2.2)	209
Process	-2.3 (3.7)	84
Manufacturing	-3.1 (3.2)	127

Figures in brackets after the unstandardized coefficients give the standard errors. Significant coefficients are shown in bold. Sample: All graduates who started first job after completing full-time education, NCDS4. Total N = (904).

The results confirm what was seen in Chapter Four. Female graduates on the whole do not suffer from a disadvantage in first job scores when compared to men. However, those who entered their first jobs in private administration are exceptions. This finding again shows that despite being one of the more 'meritocratic' sectors where qualifications have the biggest effects on first job scores, private administration is by far the 'least universalistic' sector with respect to gender inequalities. And even the most qualified cannot escape from this disadvantage.

We have already seen from the multivariate analysis in Chapter Five that women suffer from lower HG scores on recruitment as compared to men. The above analysis extends the examination of gender difference to different industrial sectors. Results show that not all industrial sectors penalise women in occupational attainment. However, it is rather surprising to see that the gender gap is actually bigger in the apparently most 'meritocratic' sectors such as public and private administration. What is apparent is that even with the highly institutionalised, formal

and impersonal recruitment procedures, organisations in the public and private administrative sectors still relegate equally qualified men and women into different jobs.

Summary and Discussion

The analyses of this chapter allow us to identify important differences in the effect of formal qualifications on first job scores between industrial sectors and organisations of different sizes. They also bring surprising findings on gender inequalities in occupational attainment that women are most disadvantaged in some of the most bureaucratised sectors. It is evident that qualifications play an important role in first job attainment in all sectors. Considerable variations exist between sectors, however. For men, private administration and the professional sectors are found to be more meritocratic in the sense that they offer higher returns to education. But for women, it is in public service where the slopes are steepest. Not surprisingly, primary production is found to be the least meritocratic sector for both men and women, and this is also the case for women in the private service sector. The disaggregation by firm size has also shown significant difference in the degree of meritocracy between large and small firms. On the whole, these findings suggest that meritocracy does not operate to the same extent in different sectors of the economy or organisations of different sizes and only a disaggregated approach can achieve better understanding in the study of attainment process.

Although employers in private administration are found to be highly 'meritocratic' in placing important emphasis on qualifications in recruitment, paradoxically women with the same level of qualifications in this sector are not treated as equally as men, i.e. women have lower occupational attainment. This makes

private administration the least 'universalistic' and perhaps the most 'sexist' sector in the economy as far as gender inequalities are concerned.

Regarding the graduates, subject specialisation is found to have different effects on recruitment between sectors. The findings that male engineers gained higher job attainment in the manufacturing sector and female scientists enjoyed higher job scores in the process industry appear to suggest that the match of specialised knowledge and skills and employers' requirements in different sectors is important.

Chapter Seven

Promotion – Job attainment in 1991

We have already seen from the analyses of Chapters Four and Five that the NCDS cohort members followed very different paths to their first jobs. The evidence showed that industrial sector was an important factor leading to different occupational outcomes after controlling for social background and qualifications. For the NCDS graduates, the subject of degree further led to distinctively different occupational outcomes. Despite their good qualifications, graduates in Creative Arts and Humanities were much more likely to take up manual work or even to face unemployment than were graduates in more job-specific subjects such as Engineering, Education or Banking and Finance. We have also seen in Chapter Six that meritocracy was more developed in sectors such as public and private administration where qualifications have the biggest effect on the first job scores. In other sectors such as private sector services, trade and agriculture, the effects of qualifications were much smaller.

As I have noted in Chapter Four, the single cohort of NCDS was affected by the particular labour market conditions at the end of the 1970's (and at the beginning of 1980's for the graduate members) when they left full-time education. Unfavourable labour market conditions may affect the 'normal' return to a given level of qualification. For instance, a considerable number of graduates took up low level jobs such as manual work as their first jobs. The effect of qualifications on occupations may as a result be masked by these external labour market factors. Hence, it is necessary to assess their later occupational attainment.

In this chapter, using more recent occupational information on the NCDS cohort, I shall examine respondents' job attainments in 1991.[1] During the ten-year period between NCDS4 and NCDS5 (i.e. 1981 to 1991), we expect to see that the lives of our respondents have undergone some considerable changes. We expect that the majority of them would have formed a family, and had children, while some may have undergone notable changes in their careers. Between the ages of 23 and 33, some cohort members may have already entered parenthood, especially those who left school at the age of 16 and the less qualified. Others may have acquired more qualifications, either from on-the-job training or direct from colleges and universities. Moreover, at the age of 33, a high percentage of women are likely to be economically inactive due to family and childcare responsibilities. Thus we expect to see some considerable disruptions to the careers or job continuity of the female cohort members.

As was discussed in Chapter Four, external labour market factors may also bring changes to the jobs of individuals. For example, the decline of certain industrial sectors such as the public sector and manufacturing in the 1980s may have cost a lot of jobs. This would imply a certain degree of movement between industrial sectors. Above all, changes related to respondents' qualifications and occupations are of key interest in this chapter. They include level of qualifications, subject of specialisation, and industrial sector. The key question is therefore: how far will these changes affect respondents' job attainment in 1991? More specifically, to what extent does the increase in qualifications affect job attainment in 1991, controlling for initial qualifications and first job? Do individuals' moves between industrial sectors have a positive or negative effect on job attainment in

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[1] Some may argue that promotion is also highly dependent on experience, punctuality, reliability and other personal traits (e.g. good team player, good interpersonal skills, etc.) that are equally important as qualifications, but personal traits are difficult to quantify. The main thrust of this thesis remains as the occupational returns to qualifications and sectoral difference.

1991? Does degree subject still have a strong effect on graduates' current employment? What impact does the change of subject of study have on their jobs in 1991? And finally will the gender gap become larger in promotion?

I begin with the changes since respondents were last interviewed in 1981. Broadly speaking, two main changes with respect to respondents' qualifications and jobs have taken place. First, some respondents have acquired further qualifications. For the graduate members this may have involved subject change as well. Second, some respondents may have changed jobs and ended up in a different industrial sector.

Increased Qualifications and Subject Changes

Not all NCDS respondents pursued further qualification after the age of 23. During the ten-year period between 1981 and 1991, only about a fifth of them acquired some kind of further qualification.[2] Some respondents may have had no qualifications in 1981 and had acquired qualifications there after, whilst others may already have been highly qualified and obtained additional qualifications such as higher degrees or professional qualifications. Table 7.1 presents the details of all respondents who obtained new qualifications since 1981.

[2] Since 1981 (Sweep Four survey), 2634 respondents gained some sort of qualifications including below A level qualifications. Many more respondents would have done in-service training but got no new qualifications. These are not looked at in this thesis since these courses were mostly firm-specific type courses and were therefore not much use in the labour market.

Table 7.1: Increased qualifications since 1981 by gender (row percentages)

	Highest qualifications obtained since 1981						
	higher degree	degree	diploma & professional	A level / similar	O level / similar	CSE, other / foreign	N
Qualification at 1981							
Higher degree	33.3[a]	11.1	44.4	11.1	0	0	9
	16.7[b]	0	83.3	0	0	0	6
degree	22.0	22.4	38.2	0.8	0	16.7	246
	13.4	21.8	39.1	2.0	1.0	22.8	202
diploma - nursing,	4.5	17.3	50.6	3.2	1.9	22.4	156
teaching, HNC/HND	0	7.7	66.3	5.5	4.4	16.0	181
A-level or similar	0.9	15.9	32.4	12.5	3.7	34.6	321
	1.8	25.2	24.5	10.4	8.6	29.4	163
O-level, C& G or	0	3.9	18.6	13.4	9.5	54.6	306
similar	0	3.3	18.2	11.6	11.9	55.1	303
CSE, or others	0	0.7	14.3	10.7	10.0	64.3	140
	0	0	10.4	6.3	11.5	71.9	96
No qualifications	0	1.3	6.5	15.6	6.5	70.1	77
	0	0	15.6	8.9	13.3	62.2	45
N	67	148	363	116	63	498	1255
	31	109	316	76	77	387	996

[a] men [b] women

Sample: respondents who acquired new qualifications since 1981, sweep 5.

Of those who obtained further qualifications since 1981, over half of those who initially had O level qualifications or below acquired new qualifications of CSE level or other qualifications. For the more qualified respondents (i.e. those who had a diploma qualification or above in 1981), again over half obtained new qualifications of at least the same standard. For degree and higher degree holders (both men and women), the most popular further studies are shown to be professional qualifications. Among this group we expect to find doctors, accountants and engineers who have obtained their first degrees in or before 1981 and went on to acquire qualifications certified by their professional regulating bodies. A fifth of the degree holders who had obtained further qualifications since 1981 had chosen to study for another degree. It should be noted that new

qualifications obtained since 1981 were not necessarily of a higher standard. For example, a degree holder in Science may have obtained a diploma in teaching since 1981.

As can be seen from Table 7.1, a high proportion of respondents obtained CSE or other qualifications since 1981. A more detailed analysis reveals that most of them had obtained other[3] and to a lesser extent foreign qualifications. These were likely to be some kind of on-the-job training or job-related qualifications. Unfortunately there was insufficient information in NCDS5 to identify what these qualifications were.

One of the most interesting features of increased qualifications is subject change among the highly qualified. Those who obtained new qualifications since 1981 may or may not have chosen the same subject. For instance, doctors and engineers who wish to obtain professional membership may have gone on to study the same subject. With ten years or more working experience, graduates are likely to rise to more senior positions, creating a need for administrative and management training. It is possible that graduates obtained a second or higher degree in a new discipline, such as Business Administration or Management, regardless of the subject of their first degrees.

We can look at these changes by simple flow charts presented in Figures 7.1 and 7.2. Outflow percentages are presented to show the proportion of the graduates moving out from their original subject to another subject. The percentages of those who obtained qualifications in the *same* subject since 1981 are shown in brackets. Instead of the collapsed schema of nine subject categories used in the analyses in previous chapters, a slightly finer classification is used here allowing us to observe the changes between first degrees and qualifications obtained since 1981.

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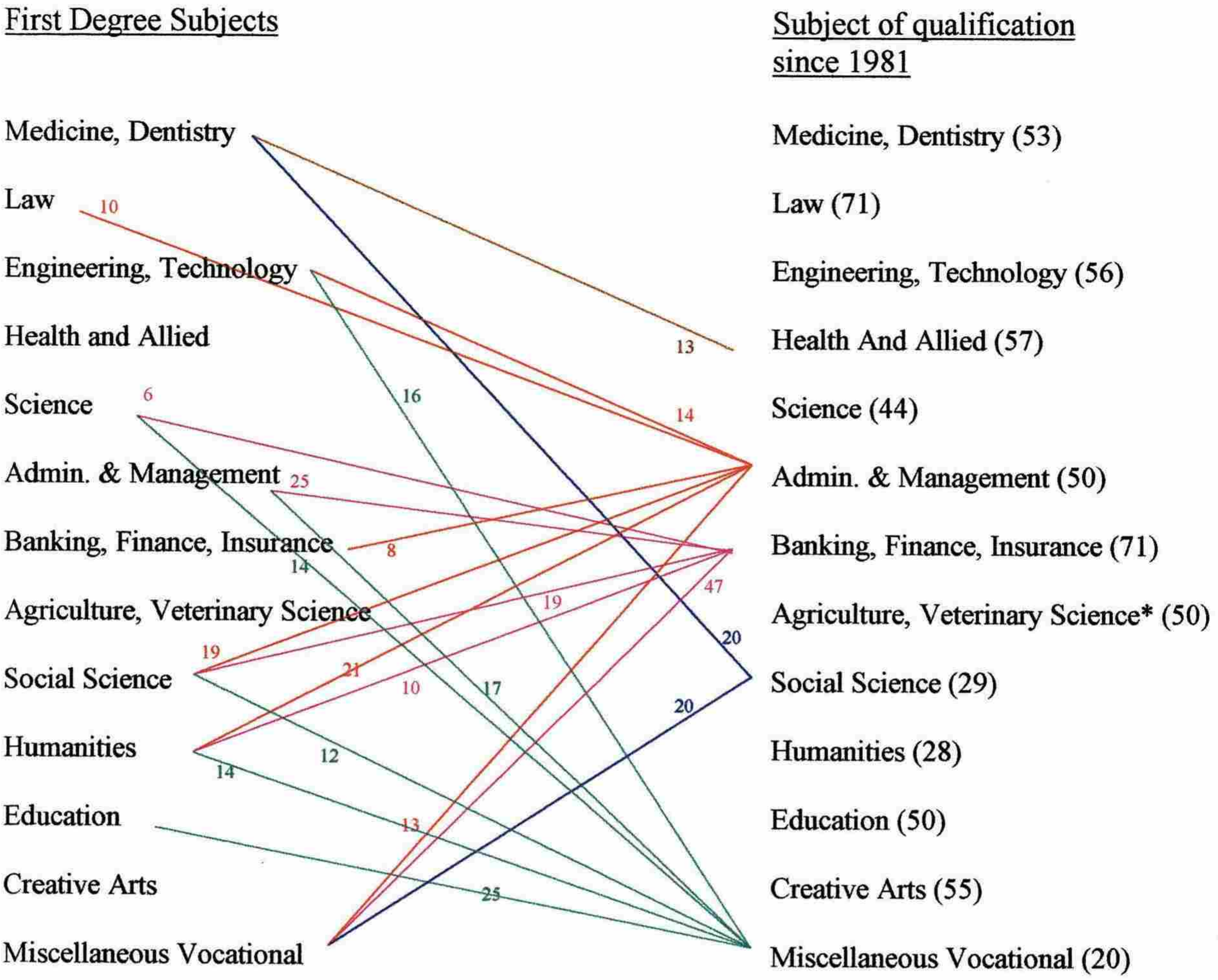
[3] Most of these 'other' qualifications are for example a diploma in acupuncture, or a workplace based course in assertiveness – 'qualifications which are unlikely to be of great value in getting a job or obtaining promotion' (Dale and Egerton, 1997: 9).

Over half of the male graduates obtained new qualifications in the same subject. The proportion remaining in the same discipline is particularly high in Law and Banking, Insurance and Finance where 70 per cent of respondents who obtained new qualifications stayed in their own specialisation areas. However, only 29 per cent of graduates with degrees in Social Science, 20 per cent in miscellaneous vocational and 28 per cent in Humanities chose to study the same subject. Meanwhile, male graduates from various subject backgrounds appear to converge into Administrative, Banking, and Finance Studies for their new qualifications. These two groups (i.e. Administrative and Management; Banking and Finance Studies) together account for over 25 per cent of all male graduates who obtained new qualifications since 1981. Training in management and finance clearly point to somewhat specific professional trajectories, such as managerial and administrative careers either in business or public organizations.

Among the male graduates who obtained higher qualifications in Administration and Management, the majority came from Social Science or Humanities backgrounds. Banking and Finance are shown to be particularly popular among the male graduates with degrees in miscellaneous vocational subjects and Social Science. While some graduates were keen to develop their careers in the banking and insurance sector, a considerable number of others opted for multidisciplinary studies[4], which are classified as miscellaneous and vocational subjects here.

[4] These refer to combined subject of Economics, Law and Social Science, combination of Social, Administration and Business Studies, other professional and vocational subjects and so on.

Figure 7.1: Subjects of Highest Qualifications in 1981 and 1991 - male graduates

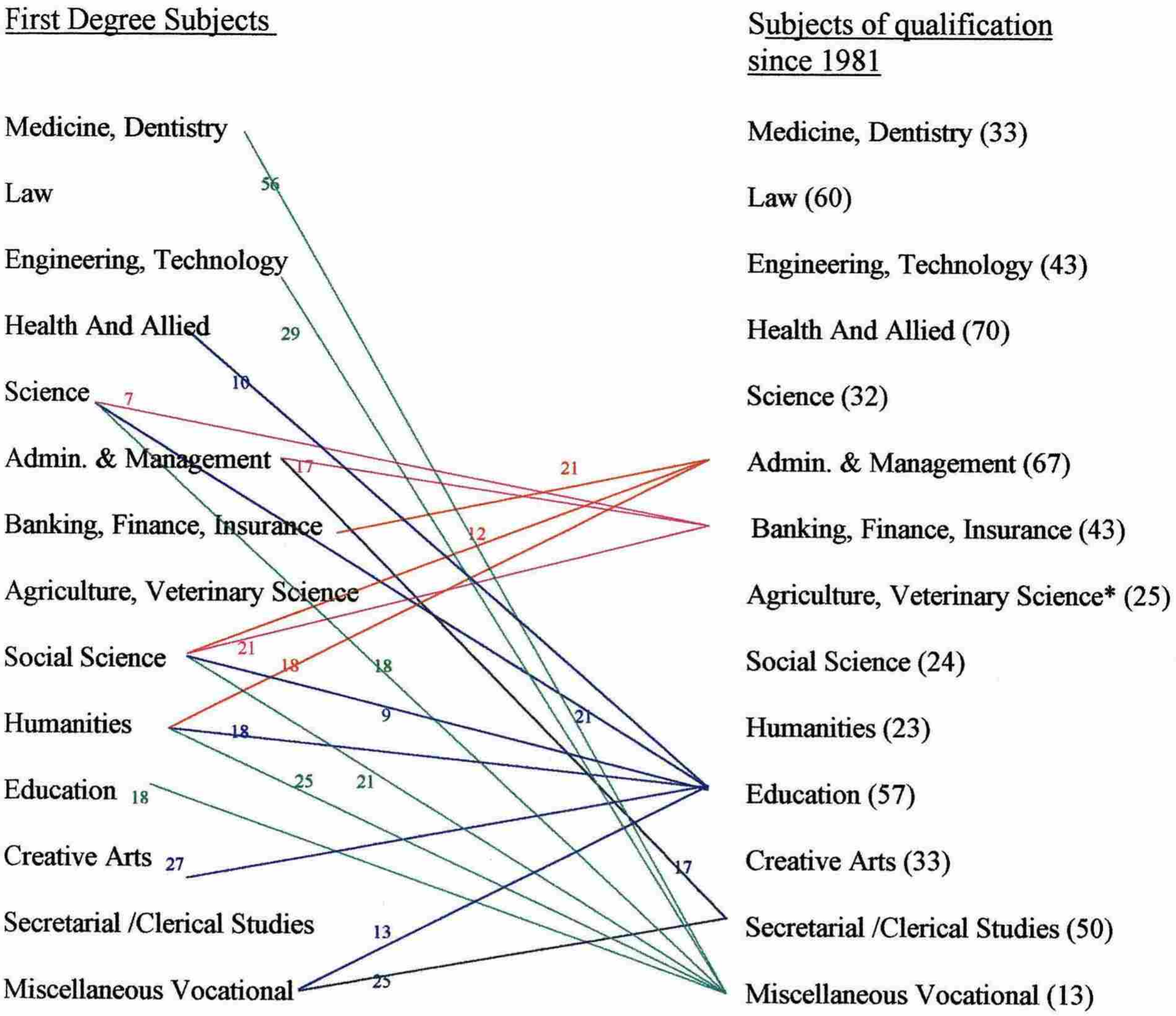


Sample: male respondents who acquired further qualifications since 1981, sweep five (N = 325).

Note: colour figures represent percentages of respondents in the origin category who acquired further qualifications since 1981 and changed their subjects. Figures in brackets give percentage with no subjec change. E.g. of graduates with first degrees in Medicine and Destintry, 53% obtained a new qualification in the same subject area while 13% obtained qualifications in Health and Allied subjects. A further 20% of them obtained qualifications in Social Science. The remaining 14% were dispersed in other subject groups in small numbers (not reported).

* Subjects with very small numbers.

Figure 7.2: Subjects of Highest Qualifications in 1981 and 1991 - female graduates



Sample: female respondents who acquired further qualifications since 1981 (N = 273).
Note: Figures in brackets give percentage with no subject change.
* Subjects with extremely small numbers.

Female graduates exhibit a slightly different pattern. Apart from graduates from Law, Health, Allied and Administrative Studies, many chose a different subject for their new qualification. Whilst Administrative Studies still attracted a significant number (10 per cent) of these highly qualified women, over 23 per cent of all female graduates who had new qualifications chose Education and 18 per cent chose miscellaneous vocational subjects for their further qualifications.

Although male and female graduates tend to choose different subjects in acquiring higher qualifications after their first degrees, they share a similar pattern. A higher proportion of those who studied the general or non-job specific subjects such as Science, Social Science, Humanities as their first degrees chose another subject in their higher qualifications. For instance, graduates, both men and women, who started their first degrees in general academic subjects, are found to study more specific, professional or vocational subjects in their new qualifications. This may suggest a missing link between higher education and professional occupations, leading to a need for further specific, professional training.

Similar findings were obtained in Dale and Egerton's (1997) 'Highly Educated Women'. In this study, they found that subject of higher qualifications showed strong gender-based differences.[5] As they observed,

> A non-vocational degree is more likely to result in a further qualification in a different subject than a vocational degree. For women, Education is the most frequently chosen subject whilst for men management or accountancy are most frequent. (Dale and Egerton, 1997: 11)

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[5] For a more detailed summary of subject of qualifications and gender difference in all tertiary education, see Dale and Egerton (1997), p.16, table 2.3. In their report, Dale and Egerton are primarily interested in the relationship between subjects of study and income.

They also suggested that men and women have different occupational choices at the age of 33:

> There is some evidence that women tend to follow a more conservative, vocationally based career strategy where teaching plays a particular important role whereas men are more likely to use existing qualifications or gain new ones to follow a career in management or finance and accounting. (Dale and Egerton, 1997:12)

Perhaps this could help to explain the discrepancy between men and women's promotion chances. On the one hand, men are more often found to obtain highly specific qualifications which fit them for senior administrative and managerial positions. On the other hand, women with a postgraduate diploma in Education are often found to be less successful than men in entering high-ranking positions. Although female graduates do not suffer any disadvantage on recruitment as compared to men, as this chapter will show, rather more men than women had moved up to more senior positions such as managerial and high professional posts in their jobs in 1991. This may be due to the weaker labour market attachment and stronger family responsibility of women, which cause interruption in their work life. A brief look at the overall economic activity of the NCDS cohort in 1991 may cast some light on this.

Economic Activity in 1991

As suggested earlier, at the age of 33 a high percentage of women, including the most qualified degree holders, may be out of the labour force due to family formation[6], thus affecting their chances of getting or staying in high-ranking jobs.

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[6] Details can be found in a recent paper by Joshi, Dex and Macran (1996) in 'Employment after Childbearing: transitions among women born in 1958'. In this paper they compared the NCDS members with the 1946 cohort and examined the extent that mothers stay in employment after they had children. They found that better educated mothers were able to avoid job interruptions by delaying childbearing, the ability to pay for their childcare, and better fringe benefits. By contrast, teenage mothers were highly unlikely to return to the labour market after childbearing (SSRU, SSRU Cohort Studies Newsletter, Spring 1996, p.7).

Table 7.2 summaries the NCDS cohort's economic activity in 1991 by gender. Note that the first and second columns refer to all respondents and the third and the fourth columns give the figures for the graduates.

Table 7.2 Economic Activity in 1991 - column percentage

	All respondents		Graduates	
	Male	Female	Male	Female
Full time work	89.4	36.1	94.5	57.2
Part time work	1.1	31.9	1.3	20.3
unemployed	6.0	2.0	2.4	1.4
home care	0.4	27.4	0.1	18.8
others	3.1	2.5	1.7	2.3
N	5588	5780	784	650

All respondents $X^2 = 4485.8$, d. f. = 4, $p > .000$.
Graduates $X^2 = 340.4$, d. f. = 4, $p > .000$.

The figures reveal that nearly 90 per cent of all the NCDS male cohort members had full-time work in 1991, whilst only 36 per cent of women were in this position. This is compared with a slightly higher figure for male graduates, reaching nearly 95 per cent and for female graduates 57 per cent. Another important but expected figure from this table is the high proportion of women in part-time work as compared to men. Broadly speaking, over a third of the female cohort members was engaged in part-time work, with a smaller proportion of the female graduates, where just over a fifth were working part-time.

Whilst unemployment figures were reported to be low in 1991 for both men and women,[7] the gender gap remained wide with respect to home care. Hardly any men (less than one per cent) stayed at home and looked after the family. Although the proportion of graduate women staying at home was lower than average, it still

[7] Unemployment rates are normally calculated by excluding the economic inactive population. In which case the percentage of unemployed for men is 6.2 per cent and 2.9 per cent for women. For graduates, the corresponding percentages are 2.5 and 1.8 respectively.

constituted almost as much as those who are in part-time employment (nearly 20 per cent).

For those who remained in work in 1991, how well did the NCDS cohort members do in their occupations? We can look at the distribution of first jobs of both men and women and their jobs in 1991 using a collapsed version of socio-economic groups.

From First Jobs to Jobs in 1991

A simple table that summarises the distributions of job attainment by gender helps give an overview before we develop further hypotheses. Table 7.3 compares the distribution of the men and women's jobs in 1991 with their first jobs.

Figures in Table 7.3 again show that a higher percentage of men than women got or remained in managerial and high professional jobs in 1991. The percentage of men getting managerial and professional jobs is twice as high as that of women in both first jobs and jobs in 1991. On the other hand, women were much more concentrated in semi-professional, and routine non-manual jobs. We can look at the difference in job attainment between men and women by computing the index of dissimilarity[8] which will show the advantage men have over women in their occupational attainment. The index is 43.7 for first job and it becomes 45.5 for the 1991 job; indicating that the gap between men and women in job attainment over time had not changed a great deal.

[8] This index is sum of the differences of percentage between men and women in each category. Only the positive (or the negative) differences are added together to form the index.

Table 7.3 First Jobs and Jobs in 1991 by gender - column percentage

	First Job		Job in 1991	
	Male	Female	Male	Female
employers & managers	3.4	1.4	19.1	9.4
professionals	4.4	1.5	7.3	2.6
semi-professionals	6.8	10.8	12.0	20.6
routine non manual	18.2	57.9	9.4	35.7
own account	1.2	0.2	8.0	2.2
foremen	0.5	0.1	3.1	0.6
skilled manual	39.4	3.6	25.1	2.4
semi/ unskilled manual	26.2	24.5	15.9	26.5
N	5867	6080	5275	5305

First Job $X^2 = 3277.1$, d. f. = 7, $p > .000$.
Job in 1991 $X^2 = 2622.1$, d. f. = 7, $p > .000$.

If we confine the comparison to graduates only, we expect a smaller contrast, but men are still in a favourable position compared with women. It is perhaps rather surprising to see that female graduates are still a lot worse off than men in gaining access to managerial and professional positions. As shown in Table 7.4, relatively few graduates started their first jobs as employers and managers, and more than half of the male graduates started as professionals and semi-professionals.

Table 7.4: First Jobs and Jobs in 1991 of graduates by gender - column percentage

	First Job		Job in 1991	
	Male	Female	Male	Female
employers & managers	9.2	7.0	29.0	14.9
professionals	28.3	12.5	29.7	15.7
semi-professionals	24.4	39.6	29.9	53.6
routine non manual	15.6	30.2	6.4	11.3
own account	0.9	0.6	2.0	1.3
foremen	1.1	0	0.4	0
skilled manual	7.1	0.6	1.2	0.3
semi/ unskilled manual	13.3	9.5	1.4	2.9
N	533	503	737	619

First Job $X^2 = 113.3$, d. f. = 7, $p > .000$.
Job in 1991 $X^2 = 125.5$, d. f. = 7, $p > .000$.

Although half of the female graduates also fall into these two categories in their first jobs, the distribution is highly skewed towards semi-professional jobs. In 1991, nearly a third of the male graduates had jobs as employers and managers, but for women this figure only reached 15 per cent. Again a third of male graduates, but only 16 per cent of their female peers, got professional jobs. The index of dissimilarity for male and female graduates is 29.7 for first job and it remains as 30.1 in 1991 job, suggesting that the gender gap among graduates' job attainment has not widened over time. However, for employers and managers, the male advantage had actually increased over time, whereas it stayed constant among the professionals.

As discussed in Chapter Four, the NCDS cohort was severely affected by the deep recession in the early 1980s when they completed their degrees. Some of the unlucky graduates were faced with either unemployment or low paid semi-skilled or unskilled manual jobs. This is supported by the high percentage of both male and female graduates taking up these jobs in Table 7.4. For these less successful graduates, one possibility may be that they went on to acquire more specific, professional qualifications, given the unfavourable labour market conditions in the early 1980's. This in turn would have opened up more job opportunities, especially for those who studied Humanities or non-vocational subjects as their first degrees. For the well-qualified graduates, it is highly unlikely that they will stay in these low paid jobs forever. Instead they are expected to move on to better jobs in time. The low percentage of graduates in manual work in 1991 appears to support this argument.

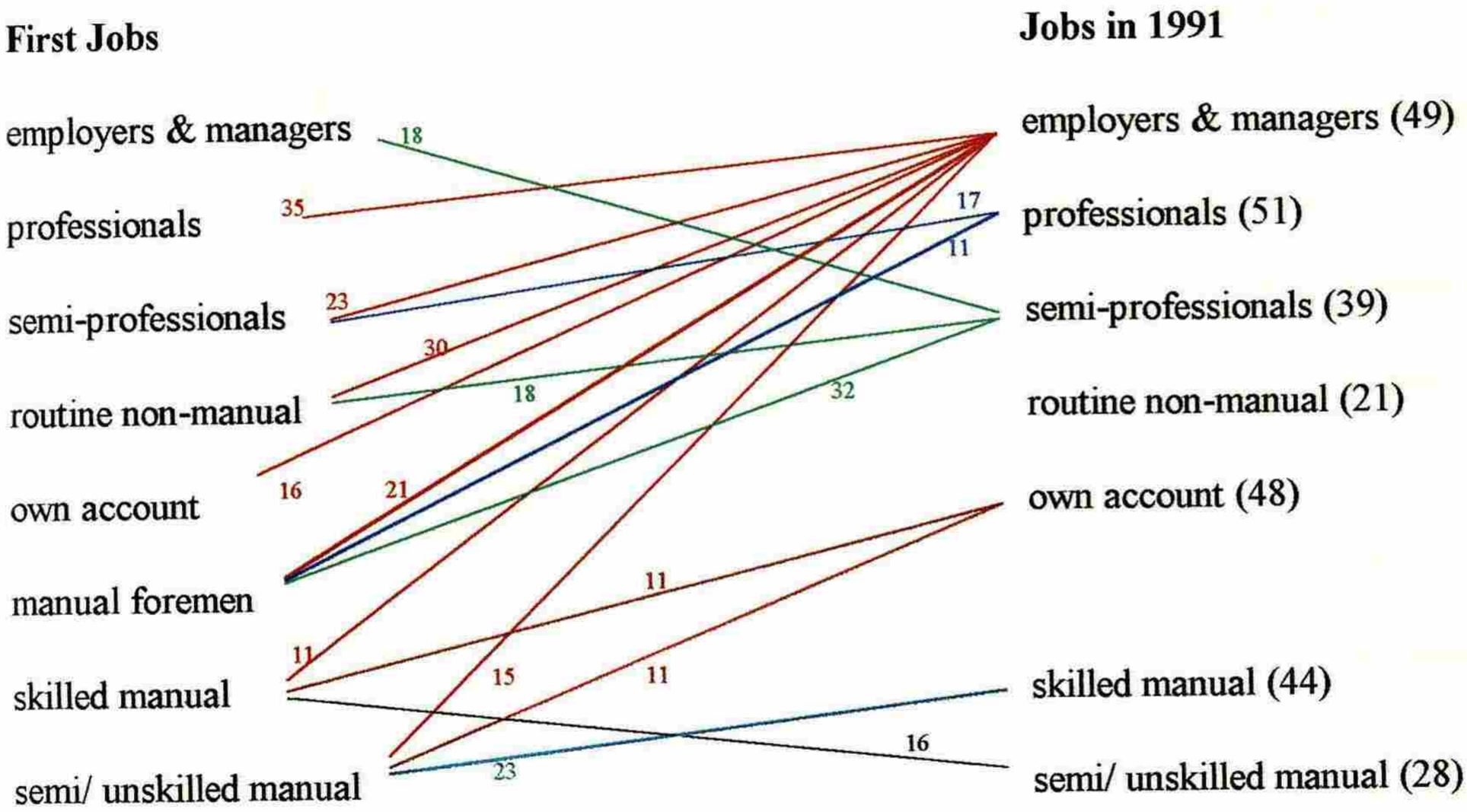
Again we can use flow charts to observe the movements between first jobs and jobs in 1991. Figures 7.3 and 7.4 show the different occupational pathways of *all* NCDS cohort members. As before, the colour figures represent the movements out of the original groupings which in this case, are the occupational groups of respondents'

first jobs. In Figure 7.3, we can see a converging pattern in which men became highly concentrated in jobs such as employers and managers in 1991. In contrast, the pattern for women is one of converging to semi-professional, routine non-manual and semi or unskilled manual work in 1991, no matter what their first jobs were (Figure 7.4). For those who started off as semi-skilled or unskilled manual workers, relatively lower percentage of men remain in these jobs as compared to women. Twenty eight per cent of men in these jobs remain in the same positions in 1991 as compared to 52 per cent of women.

The pattern of the NCDS graduates shows even more mobility between their first jobs and 1991 jobs. Figures 7.5 and 7.6 give the details of their movements between occupational groups.

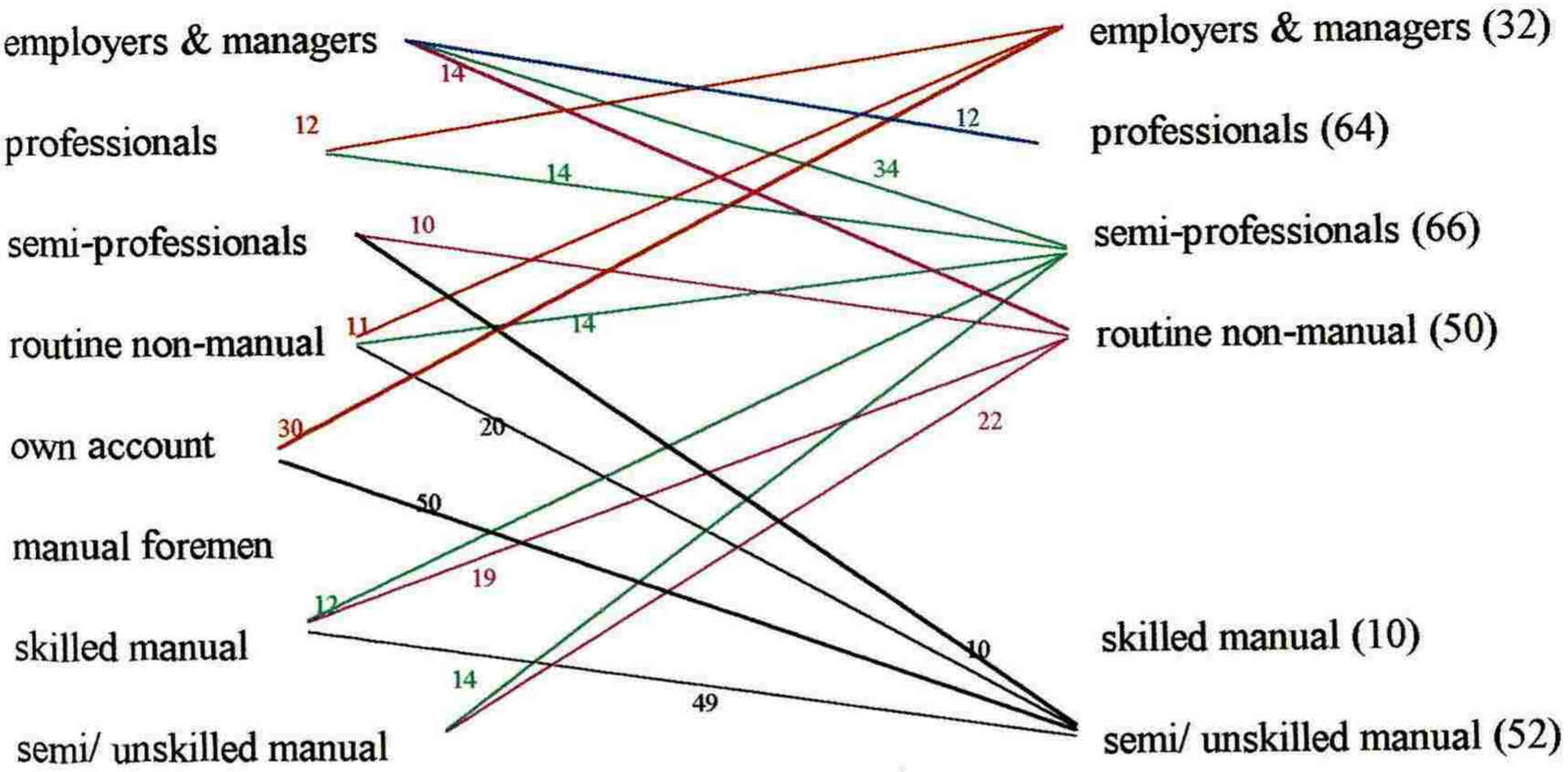
Twenty five per cent of the male graduates from skilled manual work became employers and managers and the same proportion of them became professionals in 1991. Of those who started their first jobs as semi-skilled or unskilled manual workers, 23% got an entrepreneurial or managerial post in 1991. A further 17% of them got professional jobs. In fact, over 70 per cent of the male graduates got at least semi-professional jobs, with a high proportion of them in managerial and professional positions.

Figure 7.3 Pathways from First Jobs to Jobs in 1991 - all respondents (men)



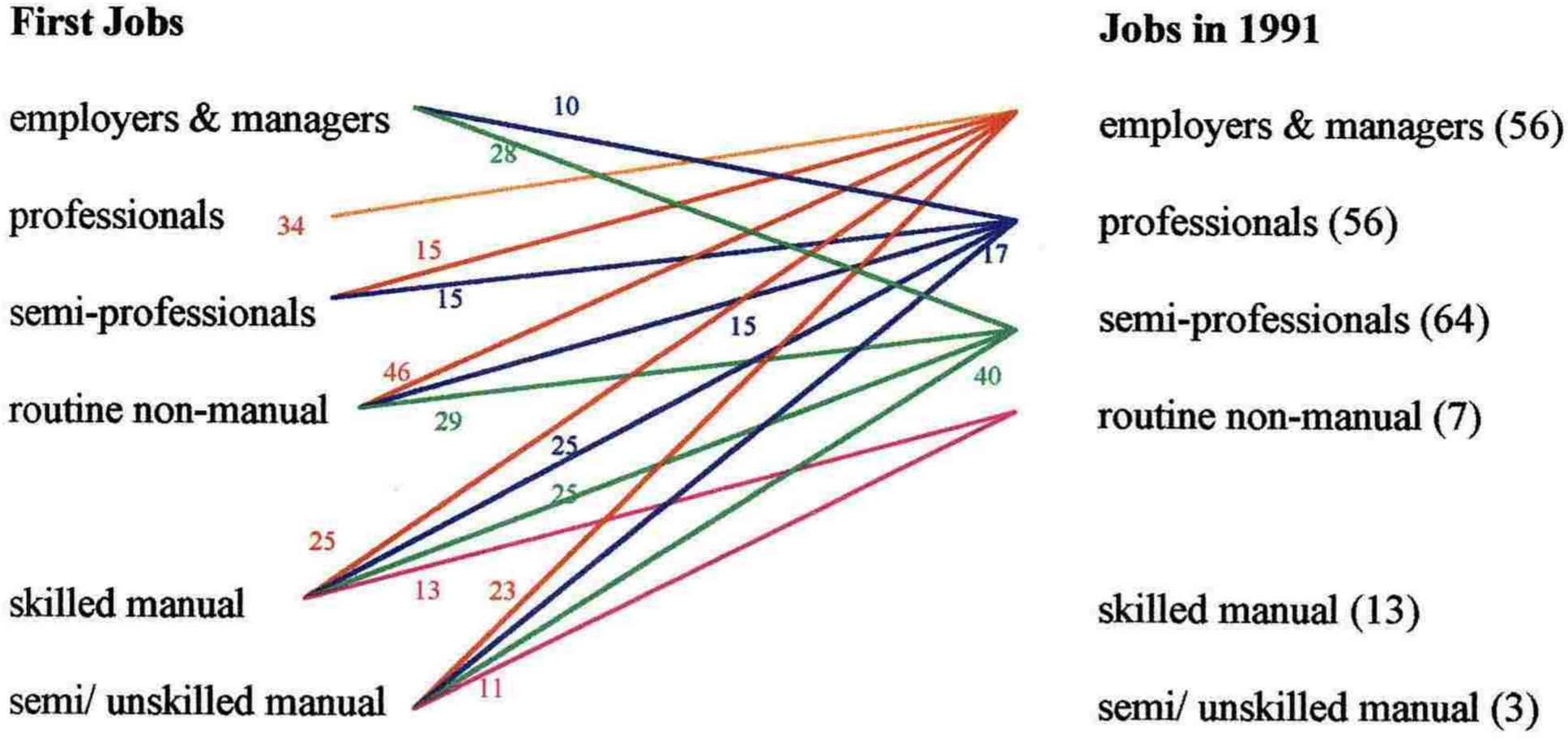
Sample: all male respondents, sweep 4 and 5 (N = 4215). Colour figures represent percentages of respondents in the origin category. Figures in brackets give percentages of those who remained in the same occupational grouping. Only movements above 10 per cent points are reported.

Figure 7.4 Pathways from First Jobs to Jobs in 1991 - all respondents (women)



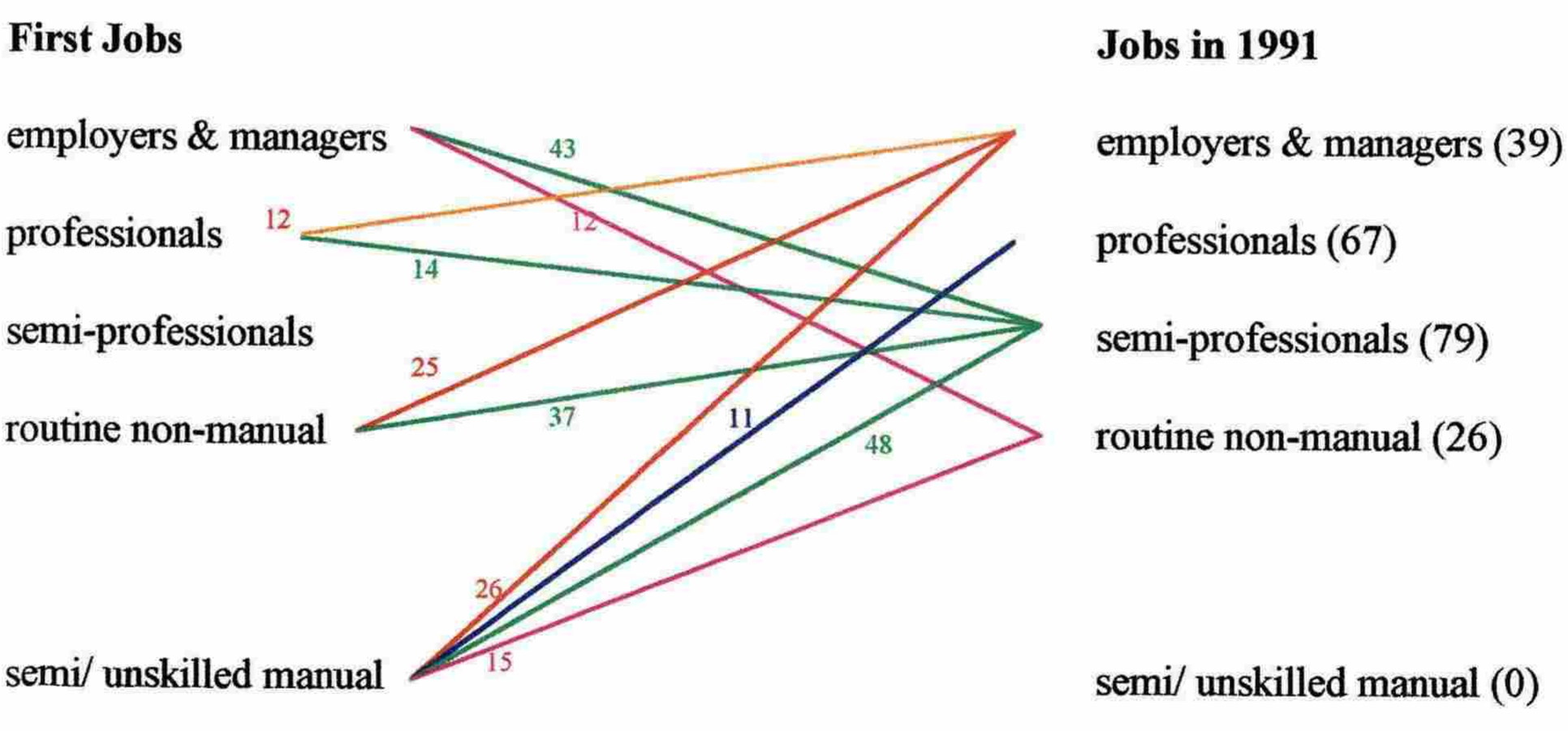
Sample: all female respondents, sweep 4 and 5 (N = 4512). Colour figures represent percentages of respondents in the origin category. Figures in brackets give percentages of those who remained in the same occupational grouping. Only movements above 10 per cent points are reported.

Figure 7.5 Pathways from First Jobs to Jobs in 1991 - male graduates



Sample: all male graduates in sweep 4 and 5 (not including those who became graduates in between) (N = 380). Colour figures represent percentages of the original occupational grouping. Figures in brackets give percentages of graduates remaining in the same occupational group. Only movements above 10 per cent points are reported. Own account and foremen are omitted due to small numbers in these categories.

Figure 7.6: Pathways from First Jobs to Jobs in 1991 - female graduates



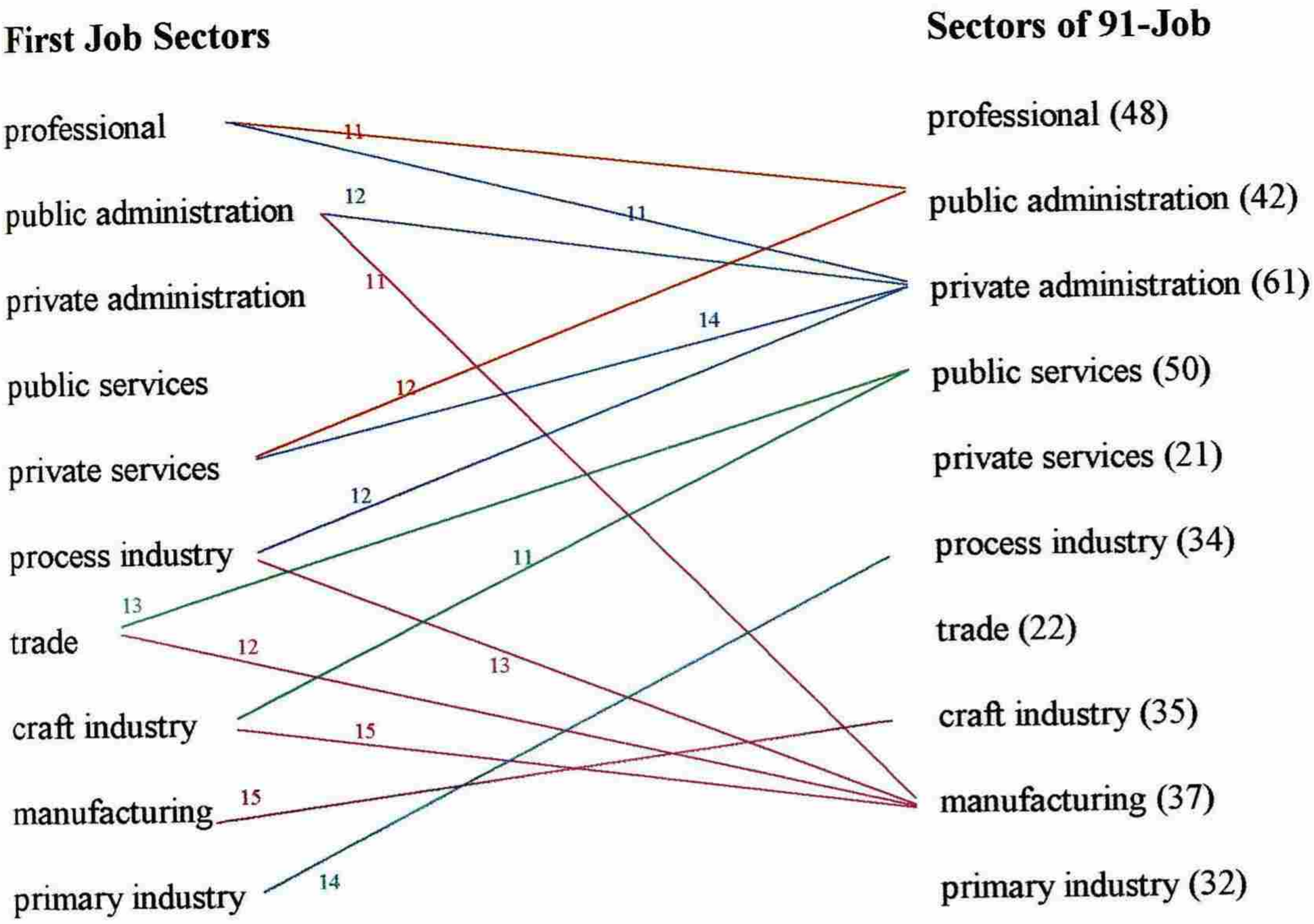
Sample: all female graduates in sweep 4 and 5 (not including those who became graduates in between) (N = 402). Colour figures represent percentages of the original occupational grouping. Figures in brackets give percentages of graduates remaining in the same occupational group. Only movements above 10 per cent points are reported. Own account and foremen are omitted due to small numbers in these categories.

As Figure 7.6 shows, this is not necessarily the case for the highly qualified women. Over 40% of them had semi-professional jobs in 1991, including a significant percentage who started their first jobs as managers and professionals. Although most women graduates including those who started off in semi-skilled or unskilled manual work in their first jobs obtained at least routine non-manual work in 1991, a high proportion of them remained in the same occupational group. For instance, 67 per cent of the professionals are found to be doing the same job (i.e. remaining as professionals) in 1991 and so did 79 per cent of the semi-professionals. However, some highly qualified women in fact suffered from downward mobility. Of those who were in executive positions in their first jobs as managers and employers, 43 per cent became semi-professionals. Possible interruptions of these women's careers are likely to be childbearing during their late 20s or early 30s. They may have had to take up slightly lower-level jobs when returning to the job market. Whether or not this is the result of absence from the labour market is not the main concern of this thesis. Since the main interest of this study is on sectoral difference, I shall focus on the last dimension of the changes related to their occupation - the change of industrial sector.

From First Jobs' industrial sectors to 1991 Jobs' industrial sectors

Evidence in the previous chapter suggests that there are important differences between respondents' first job attainment in different industrial sectors. To what extent did respondents move between these sectors from their first jobs to their jobs in 1991? How many of them stayed in the same sector? Are men and women different in the ways they move from one sector to another? Figures 7.7 and 7.8 give the picture.

Figure 7.7: Pathways from First Job sectors to 1991's job sectors -all males

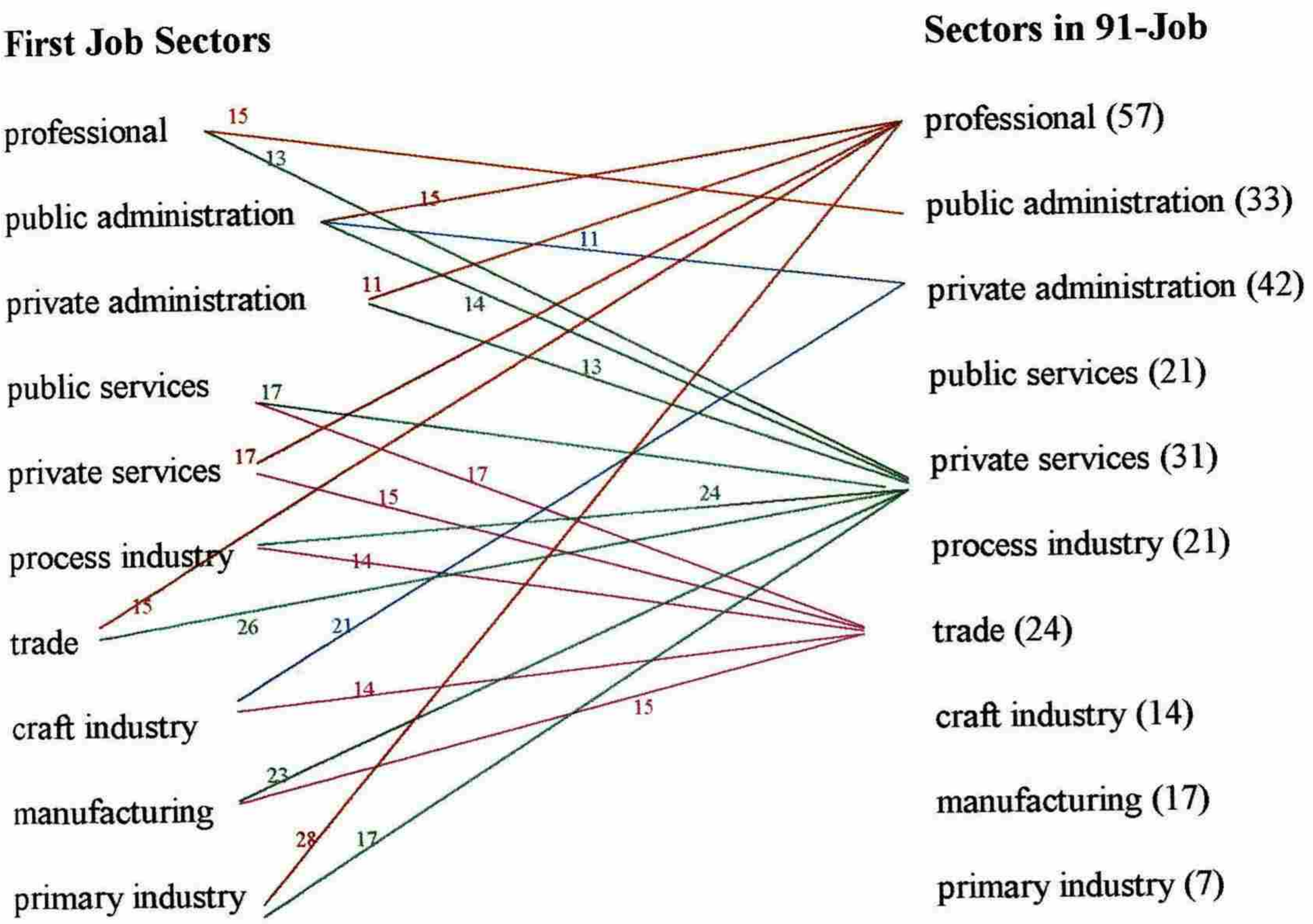


Sample: all male respondents, sweep 4 and 5 (N = 2757). Colour figures represent percentages in the original industrial groupings and figures in brackets give percentage of those who remained in the same sector.

Figure 7.7 shows that there is much movement between industrial sectors from the male respondents' first jobs to their jobs in 1991. It is readily notable from the figure that in the private services and trade sectors, only 21 and 22 per cent respectively of male respondents stayed in these sectors in 1991. Note that the movements from first job sectors are converging on private administration and manufacturing. In contrast, 61 per cent of those who started in private administration i.e. banking, finance and insurance stayed in the same sector. In the professional and public service sectors, we also see that half of the men remain in these sectors. For those who changed sectors, public and private administration, and manufacturing are the most popular destinations. It is possible that these sectors offer higher pay and

better promotion prospects. Thus we expect a change of sector to bring higher occupational attainment in their jobs in 1991.

Figure 7.8: Pathways from First job sectors to 1991's job sectors -all females



Sample: all female respondents, sweep 4 and 5 (N = 3133). Figures in brackets give percentage of those who remained in the same sector.

For the female cohort members, Figure 7.8 displays a very different pattern. Apart from the professional sector where 57 per cent of them remained in the same sector, all the other sectors are recorded to have a relatively high level of outward movements. Only 14 per cent in the craft industry and 7 per cent in primary industry did not leave. These movements seem to concentrate in three sectors, namely, professional, private services and trade. Considering the high percentage of women working part-time in 1991, it is possible that these sectors are more likely to employ part-time workers[9] who are attracted by the more flexible working hours.

[9] See Tam (1997) for a discussion of sectoral difference in the use of part-time workers.

From the above flow charts we can see that there is a great deal of movement with respect to respondents' qualifications and occupations since their first jobs. First, for those who obtained new qualifications after 1981, many of them did not choose the same subjects. Men are more likely to acquire new qualifications in Administration, Banking and Finance, whilst women are more likely to acquire teaching qualifications (i.e. Education). Second, both men and women achieved some degree of social mobility, but more women remained in semi-skilled and unskilled work in 1991. Third, a considerable number of respondents changed industrial sectors in 1991 from their first job sectors. For those who changed sectors, men are more likely to be attracted to the administrative and manufacturing sectors, whereas women changed more often to services and trade.

Table 7.5: Mean values of Hope-Goldthorpe score of 1991 job by gender and sector

1991 sector	Men	Standard deviation	N	Women	Standard deviation	N
Professional	56.6	15.4	197	52.1	15.9	693
Public administration	55.9	14.8	352	46.8	15.6	392
Private administration	59.4	15.4	430	46.1	14.5	507
Public services	42.6	16.6	368	40.5	14.8	152
Private services	45.4	16.9	228	35.1	14.9	782
Process	47.9	16.1	346	40.1	12.8	251
Trade	49.2	16.6	293	39.8	10.9	535
Craft	45.7	14.1	479	44.5	14.7	89
Manufacturing	47.0	14.8	556	41.1	13.0	196
Primary production	40.9	13.5	59	37.5	12.1	19
Average score	48.9	16.3	3308	43.4	15.7	3616

Sample: All cohort members in work, NCDS5 (N = 6924).

Apart from the high level of movement between first job and 1991 job industrial sectors, to what extent are the occupational scores of the NCDS cohort different between sectors in 1991? Table 7.5 presents the mean values of the Hope-Goldthorpe score of respondents' jobs in 1991 by gender and industrial sector.

Not surprisingly, the occupational desirability of the NCDS cohort's jobs, as measured by Hope-Goldthorpe scores, had increased in 1991 as compared to their first jobs scores. The average mean score in 1991 is 48.9 for men and 43.4 for women. Compared with their first job scores, men are doing better with a seven-point increase whereas women only achieve a three-point increase on average. Similar to their first jobs, respondents who worked in the professional, public and private administrative sectors continue to score higher than their counterparts in other sectors. Male respondents who had a job in the two administrative sectors in 1991 were particularly well off, with a ten-point rise in their job scores. It can also be observed that women still consistently fared worse than men.

Changes since First Jobs

The main interest in this chapter is to explore the effects of the changes that had taken place between respondents' first jobs and their jobs in 1991 on their occupational attainment. Such changes are: increased qualifications since 1981 (at the time of the sweep four survey), the change of industrial sector, and, for the graduates, the change of subject of their highest qualifications. The discussion from the bivariate analysis so far only gives a descriptive account of these changes without exploring the associations between these changes and respondents' occupational attainment in 1991. The next section of this chapter thus asks the following questions: To what extent do respondents' qualifications gained *before* 1981 affect promotion (i.e. their 1991 job attainment, controlling for first job Hope-Goldthorpe scores)? Does increased qualification since 1981 make any difference? Does the change of industrial sector bring any advantage in increasing the HG scores in 1991? For the graduates, does the change of subject increase their occupation scores in 1991?

Whilst the above questions are of main interest, this chapter also aims to establish the extent to which social origins, school type and firm size affect respondents' promotion chances. It also aims to ascertain whether cultural reproduction is still visible in promotion. By doing so, we can ascertain the net effect of the changes since 1981 on respondents' promotion chances in 1991.

As was discussed in the previous chapter, meritocracy is expected to be most developed in first job attainment since employers have few criteria to judge their potential employees' ability and have to rely primarily on applicants' qualifications. Qualifications are therefore expected to have a large effect on first job attainment. However, the effect of qualifications may diminish for subsequent jobs since employers may now depend on other criteria, such as accumulation of experience and other personal traits (communication skills and good team player, etc.) when employing and in particular promoting their staff. It can therefore be hypothesised that the effects of qualifications will be reduced once first job scores are controlled.

But so far we are only talking about qualifications gained *before* first jobs. New qualifications gained after respondents started their first jobs have to be treated separately. As I have pointed out earlier in this chapter, some two thousand respondents obtained further qualifications since 1981. These could be professional, vocational or technical qualifications. As we have already seen that qualifications have a major effect on first job attainment, a further hypothesis can be drawn at this point: the increased qualifications since 1981 will have positive effects on their job scores in 1991.

We have repeatedly seen in the analyses in Chapter Five that the returns to individuals in terms of occupation scores in different industrial sectors vary a great deal. And between 1981 and 1991 there was a lot of movement between sectors. It is

possible that with increased qualifications, individuals are offered a wider range of choices and were able to choose more freely. Also as mentioned earlier, external labour market changes such as the decline of some industrial sectors may also be responsible for these changes. In fact, Figures 7.7 and 7.8 indicate that these changes are pointing in certain directions. The pattern suggests that some sectors such as private administration are more attractive to men, while the trade industry which mainly includes wholesaling and retailing, was shown to be the most common destination for women in 1991. Individuals' moves in changing jobs between sectors may reflect the need for re-training and may cause the loss of tenure (or seniority/length of service in a job). This may mean individuals have to start from the bottom of the job ladder again when they start a new job, particularly in a new sector. For women, retail and wholesale, and personal and other services usually offer poorer rewards than manufacturing work. It can thus be hypothesised that the change of sector between first job and 1991 job is negatively associated with their job scores in 1991.

To sum up, three hypotheses are developed for the multivariate analysis in the next section:

1. The effects of initial qualifications on job attainment in 1991 will be less important as first job scores (recruitment) are taken into account.
2. Increased qualifications since 1981 have positive effects on job scores in 1991.
3. The change of sector between first job and 1991 job will have a negative effect on the 1991 job scores.

Brief Description of variables

In the forthcoming analysis, in addition to all the variables used in the analyses in previous chapters, three new variables are introduced.

Qualifications since 1981

As was discussed at the beginning of this chapter, both the level and the type of qualifications obtained since 1981 vary a great deal. For the sake of simplicity, and in order to establish whether new qualifications obtained since 1981 have any positive effect on job attainment in 1991, a dichotomous variable is created to represent whether or not the respondent had obtained qualifications since 1981.

Change of sector

Information on industrial sector was collected in the sweep V survey. As was discussed in the previous chapter, industrial sectors in the British economy underwent different rates of growth or decline. It is likely that respondents may leave declining sectors and move to growing and more prosperous ones where more opportunities are available. To capture the effect of change of sector on respondents' job attainment in 1991, a dichotomous variable was constructed - (1) changed industrial sector; (2) remained in the same sector.[10]

Change of subject (for graduates)

The subject of the highest qualification obtained since 1981 as well as the subject of graduates' first degree are used to construct a dichotomous variable to represent the *change* of subject for all graduates who obtained further qualifications since 1981. This will only be included in the graduate-only analysis.

[10] Since information on both industrial sectors of first job and job in 1991 is needed for constructing this variable, the number of cases is further reduced to 5890.

Regression of all respondents' 1991 job scores

To test the hypotheses that new qualifications and change of subject will increase occupational scores and that the change of sector has the reverse effect, models using ordinary linear regression are presented. The response variable is respondents' Hope-Goldthorpe occupation scores in 1991. First of all, a set of pooled models is presented including both men and women. This analysis is followed by a series of separate models for men and women, controlling for the same sets of explanatory variables in order to explore whether there are differences in the way the attainment process operates for men and women. As was discussed earlier, over 30 per cent of women (and 20 per cent of female graduates) worked part-time in 1991. In order to assess how this would affect the return to their qualifications, an extra dummy variable is introduced in the women-only model to control for part-time work.

The results of the models including all respondents are presented in Table 7.6.1. In model 1, in addition to gender and social origins, parental education, parental cultural capital, respondents' ability and cultural activities are controlled. From the pooled analysis (i.e. models including both men and women) we are able to formally test whether men are advantaged when compared to women in their occupational attainment in 1991. The persistent effects of social origins and gender on respondents' job attainment in 1991 are somewhat expected. The higher the social origin, the bigger the increment is predicted in respondents' job scores. Controlling for the other variables in Model 1, at the age of 33, women are seven points worse off than men in their job scores.

What is rather unexpected is that both parental education and parental cultural capital still have significant positive effects on respondents' jobs at the age of 33. Respondents' general ability test scores and their *scholarly* cultural activities at age 11

(i.e. reading activities in addition to school requirements) are also found to be positively related to their job attainment in 1991. However, the magnitude of these effects is rather small and as can be seen in Model 2, (with the exception of reading activities) parental education and the other cultural capital variables become insignificant after the level of qualification is included in the model.

Table 7.6.1: Hope-Goldthorpe Scores of jobs in 1991 - all respondents

	Model 1	Model 2	Model 3	Model 4
Constant	**26.6 (.9)**	**31.3 (1.1)**	**32.9 (1.3)**	**28.0 (1.8)**
Female	**-7.4 (.4)**	**-5.8 (.4)**	**-6.5 (.4)**	**-6.5 (.5)**
Social origins (base: semi/ unskilled manual)				
employers & managers	**5.3 (.6)**	**3.8 (.7)**	**3.3 (.6)**	**2.5 (.7)**
professionals	**5.8 (.9)**	**2.8 (1.0)**	**2.1 (.9)**	1.0 (1.0)
semi-professionals	**3.9 (.8)**	**2.0 (.9)**	**1.3 (.8)**	1.3 (.9)
routine non-manual	**2.6 (.8)**	**1.5 (.8)**	**.5 (.8)**	1.5 (.8)
own account	**2.0 (.8)**	**2.4 (.8)**	**1.7 (.8)**	.4 (.9)
manual foremen	**1.8 (.7)**	**2.1 (.7)**	**1.3 (.7)**	.5 (.7)
skilled manual	**1.0 (.5)**	.9 (.5)	.4 (.5)	-.2 (.6)
Parental education	**.7 (.1)**	.2 (.1)	---	---
Parental cultural capital	**.2 (.1)**	.0 (.1)	---	---
Ability at 11*	**.29 (.04)**	**.09 (.02)**	**.09 (.03)**	**.08 (.03)**
Respondents' cultural activities				
art	-.3 (.2)	**-.3 (.2)**	-.3 (.2)	-.3 (.2)
reading	**.6 (.1)**	**.4 (.1)**	**.4 (.1)**	**.4 (.1)**
schools (base: comprehensive)				
grammar		.1 (.6)	.01 (.6)	---
direct grant/ independent		1.3 (.8)	1.5 (.8)	---
secondary modern, etc.		-.2 (.5)	-.3 (.4)	---
qualifications before first job (base: no qualifications)				
degree		**21.8 (.8)**	**21.3 (.9)**	**18.3 (1.1)**
post A-level		**19.3 (.7)**	**18.1 (.8)**	**16.9 (.9)**
A-level		**11.0 (.6)**	**10.9 (.7)**	**10.3 (.9)**
O-level		**6.0 (.6)**	**5.8 (.6)**	**5.9 (.7)**
CSE, etc.		**2.1 (.6)**	**1.9 (.7)**	**2.1 (.8)**
Industrial sectors of first job (base: primary production)				
Professional			**3.3 (1.2)**	-.9 (1.6)
Public administration			2.4 (1.2)	-.2 (1.6)
Private administration			2.2 (1.2)	.5 (1.5)
Public services			1.4 (1.4)	-1.5 (1.7)
Private services			.3 (1.2)	-.3 (1.5)
Process			-1.6 (1.2)	-2.8 (1.5)
trade			.4 (1.1)	-.4 (1.4)
craft			-1.1 (1.2)	-2.2 (1.5)
manufacturing			-.2 (1.1)	-2.5 (1.4)
Size of establishment of 91 jobs				
large firms				**2.5 (.4)**
First job score*				**.19 (.02)**
Change of sector				**-1.4 (.4)**
Qualifications since1981				**3.4 (.4)**
Adjusted R^2	.22	.34	.34	.38
Explained sums of squares	396460	458645	513455	421546
Degrees of freedom	13	21	28	29
N	6960	5065	5771[11]	4241[12]

Figures in brackets after the unstandardized coefficients give the standard errors.
Significant coefficients are shown in bold. * Two decimal places are given for the coefficients of 'ability' and 'first job score' because of the small standard errors.

[11] Insignificant variables (parental education and parental cultural capital) are removed from Model 3 to retain a reasonable number of cases in the model. As a result the N increases.
[12] The drastic reduction of N in Model 4 is due to the high level of missing data of the 1991 industrial sector. Tests have been carried out including the category of missing data but the results were not significantly different.

In Model 2, school type and qualification level *before* first job are introduced. The former proves to be insignificant whilst qualifications *before* first job are shown to have direct significant effects on respondents' Hope-Goldthorpe occupation scores in 1991. This has only narrowed the gap between men and women a little – with the gender coefficient reduced by 1.6. This suggests that women are still penalised by lower occupational attainment, even when qualification is controlled. As expected, qualifications reduce the effects of social background and general ability test scores to a considerable extent, and the effect of the latter is reduced by more than half. Moreover, parental education and parental cultural capital become statistically insignificant. On the other hand, respondents' cultural activities surprisingly remain significant. More interestingly, *scholarly* cultural activities have positive effects whilst *beaux-arts* cultural activities have the opposite effects.

The occupational scores in 1991 are still largely proportional to the level of qualification obtained by respondents. For example, a degree has a 20-point advantage in occupation scores over CSE qualifications. However, as we can see, the effects of social origins are still highly significant even after controlling for qualifications, ability and respondents' cultural activities.

In Model 3, industrial sector of respondents' first jobs are included in the analysis[13]. By and large, with the exception of the professional sector, first job industrial sector does not have any significant effect on respondents' job attainment in 1991. Those who started their first job in the professional sector, however, gained a 3-point advantage in their 1991 job scores. One possibility is that there may be better job ladders in this particular sector.

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[13] Note that insignificant variables such as parental education and parental cultural capital are removed from the final model to maximize the number of cases in the analysis.

Model 4 includes the changes that had taken place since 1981, such as changes in industrial sector and new qualifications obtained since 1981. The size of establishment of respondents' jobs in 1991 and their first job Hope-Goldthorpe scores are also included[14]. Most social origins, apart from the entrepreneurial and managerial class, no longer have significant effects on respondents' job attainment in 1991.

Not surprisingly, respondents' first job scores have highly significant effects on their 1991 job scores. This means that respondents with initial educational success had continued to maintain their original advantage. Qualifications obtained after 1981 also bring an advantage by over three points. These findings therefore support hypotheses 1 and 2. Although the introduction of first job scores and qualifications *since* 1981 reduces the effect of initial qualification considerably, the direct effect of the latter on promotion is still highly visible, which has nothing to do with initial job placement. This suggests that for respondents who entered the labour market at the same level, the more educated ones got higher promotion. Formal qualification thus brought a double advantage. Not only did it help respondents to get better first jobs, it also increased their competitiveness in promotion chances, even though they may have started at the same level as their less educated counterparts in their first jobs.

Interestingly, even controlling for initial and further qualifications, and first job scores, respondents' general ability test scores at age 11, and their reading activities at the same age remain significantly positive for promotion chances. In other words, those who obtained high scores in their general ability tests, and with high level of 'scholarly' cultural (reading) activities at age 11 are predicted to achieve higher occupational attainment at age 33.

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[14] School type was initially included in model 4 but was found to be insignificant. It was therefore removed from the final analysis.

Changes in industrial sector since 1981 also generate interesting results. Whilst the industrial sector of first job proves to be insignificant, the *change* of sector, however, is found to have significant negative effects on respondents' job scores in 1991, although only by just over one point. This supports the hypothesis (hypothesis 3) that changing sector has a negative effect on promotion. It is likely that those who stayed in the same job or sector (or employer) would have gained some advantages from ten years' employment (such as seniority). Those who changed sector usually (indicating a change of job or firm) would have lost their tenure (length of employment) and would have to start all over again, possibly from the bottom of the job ladder.

As previous research has found, large organisations are associated with higher occupational returns, greater capital investment and better working conditions. Higher occupational returns normally refer to higher pay (Kalleberg and Sorensen, 1979; Althauser and Kalleberg, 1981; Evans and Leighton, 1989), better chances of promotion, better on-the-job training, and higher occupational prestige (Kerckhoff, 1993). The results from Model 4 confirm previous research that respondents who worked in large firms enjoy higher occupation scores.

To investigate whether the effects of these variables operate on men and women's promotion differently, we now turn to the separate models for men and women. Results for men are presented in Table 7.6.2 and those for women in Table 7.6.3.

Table 7.6.2: Hope-Goldthorpe Scores of jobs in 1991 - all men

	Model 1	Model 2	Model 3	Model 4
Constant	**24.6 (1.2)**	**29.3 (1.5)**	**31.3 (1.7)**	**26.3 (2.3)**
Social origins (base: semi/ unskilled manual)				
employers & managers	**6.88 (.9)**	**5.5 (.9)**	**4.5 (.8)**	**3.4 (.9)**
professionals	**5.5 (1.3)**	**3.8 (1.4)**	2.8 (1.2)	-.3 (1.4)
semi-professionals	**5.4 (1.1)**	**3.7 (1.2)**	2.2 (1.1)	.9 (1.2)
routine non-manual	**3.9 (1.1)**	**2.8 (1.2)**	1.8 (1.1)	**3.0 (1.3)**
own account	**3.4 (1.1)**	**3.1 (1.2)**	1.8 (1.1)	1.1 (1.5)
manual foremen	**2.0 (.9)**	**2.4 (1.1)**	1.3 (.9)	-.4 (1.2)
skilled manual	**1.6 (.7)**	1.2 (.8)	.2 (.7)	-.8 (.9)
Parental education	**.6 (.2)**	.1 (.2)	---	---
Parental cultural capital	**.2 (.1)**	.1 (.1)	---	---
Ability at 11*	**.39 (.07)**	**.19 (.04)**	**.18 (.04)**	**.18 (.04)**
Respondents' cultural activities				
art	-.1 (.2)	-.4 (.3)	-.3 (.2)	-.1 (.2)
reading	**.5 (.2)**	.3 (.2)	.3 (.2)	.3 (.2)
Schools (base: comprehensive)				
grammar		.6 (.9)	.6 (.9)	---
direct grant/ independent		**2.8 (1.2)**	**2.7 (1.1)**	**---**
secondary modern, etc.		.8 (.6)	.7 (.6)	---
Qualifications before first job (base: no qualifications)				
degree		**21.3 (1.3)**	**20.9 (1.3)**	**18.7 (1.6)**
post A-level		**18.1 (1.3)**	**17.8 (1.2)**	**17.4 (1.4)**
A-level		**11.9 (1.1)**	**12.0 (.9)**	**12.2 (1.2)**
O-level		**7.1 (1.0)**	**7.2 (.9)**	**8.6 (1.1)**
CSE, etc.		**2.3 (1.1)**	**2.4 (1.0)**	1.8 (1.1)
Industrial sectors of first job (base: primary production)				
Professional			2.3 (1.6)	3.0 (2.2)
Public administration			2.4 (1.4)	-.6 (1.9)
Private administration			**3.0 (1.5)**	.9 (1.9)
Public services			1.0 (1.6)	-3.3 (2.1)
Private services			-.4.0 (1.5)	-1.7 (2.0)
Process			**-4.0 (1.4)**	**-4.7 (1.9)**
trade			.4 (1.3)	.9 (1.8)
craft			-1.6 (1.3)	-3.3 (1.7)
manufacturing			-1.0 (1.2)	**-3.9 (1.7)**
Size of establishment of 91 jobs				
large firms				.4 (.6)
First Job's score*				**.19 (.06)**
Change of sector				-.9 (.6)
Qualifications since1981				**2.6 (.7)**
Adjusted R^2	.22	.33	.34	.38
Explained sums of squares	202065	211145	242500	198579
Degrees of freedom	12	20	27	28
N	3464	2467	2779	1913

Figures in brackets after the unstandardized coefficients give the standard errors.
Significant coefficients are shown in bold. * Two decimal places are given for the coefficients of 'ability' and 'first job score' because of the small standard errors.

In general, men obtained higher scores in their 1991 jobs than women, as can be seen by comparing the constants (and by the gender coefficient in Table 7.6.1) in the regressions. The returns to qualifications in 1991, however, are remarkably similar between men and women although women benefited slightly more (by one point) from new qualifications obtained since 1981. For instance, as shown in Model 2, degree education brings an advantage in job scores of 21 points for men, and of 22 points for women. The differences between the two sexes at other levels of qualification do not exceed two points. The only exception may be respondents with O level or equivalent qualifications where men have consistently higher scores. This may be due to the fact that the vocational qualifications men obtained (e.g. ONC, OND, etc.) generally lead to skilled manual or even manual supervisory jobs. Considering that the standard errors of the qualification coefficients are not very different (i.e. less than one standard error in most cases), it is unlikely that qualifications have a different effect on the job attainment of men and women.[15]

For both men and women, as can be seen from Model 2[16] and Model 4, the effects of initial qualifications are reduced once first job scores are taken into account. For men, in Model 4 even when qualifications, ability at age 11, school type, first job attainment and changes in industrial sectors are controlled, the effect of social origin on 1991 job scores still persists for respondents from entrepreneurial and managerial

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[15] In other words, no significant interaction effect between qualification, gender and job scores in 1991 is expected, although strictly speaking a formal test is needed.

[16] Another finding which worth's noting is that private selective secondary education remains significant for men but not for women (see Model 2 in Table 7.6.2). While it has been argued that the myth of 'the old school tie' no longer applies to the contemporary British society (see Heath and Cheung's work on first job attainment, 1997), the finding here suggests that old public school boys still enjoy a significant advantage in securing occupational privileges in their thirties. However, for women, respondents who attended secondary modern schools are penalized by lower job scores. A formal test is conducted to establish if the effect of secondary modern and independent schools vary between men and women on their 1991-job scores and the result is found to be insignificant.

homes. With respect to women, the origin effect on 1991 job scores disappeared after qualification is controlled for.[17] Again, these findings lend support to hypotheses 1 that the effects of initial qualifications will be reduced after first job attainment is taken into consideration.

As for industrial sector, men who started their first jobs in private administration obtained three extra points in their job scores, whereas those who started in process industry were nearly four points worse off when compared to men in primary production. On the other hand, women who started in the professional sector gained a five-point advantage over their peers in primary production. These results confirm that structural factors such as industry also have a role to play in explaining men's differential occupational attainment.

In the final model, men who started their jobs in the process and manufacturing industries are shown to experience a significant disadvantage in their 1991 job scores. Industrial sectors no longer have a significant influence on women's job attainment in 1991 once changes since first jobs are included in the analysis. Cultural activities (beaux-arts) proves to be a negative factor for job attainment in 1991 for women while reading activities are no longer significant for both men and women. Finally, women are seen to enjoy increased job scores in large firms but this is not the case for men.

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[17] Whether social origins have different effects on men and women's job attainment in 1991 needs to be formally tested by introducing an interaction effect. The results suggest that women from entrepreneurial and managerial homes do not enjoy the same advantage that men from these backgrounds do in gaining higher occupational scores.

Table 7.6.3 Hope-Goldthorpe Scores of jobs in 1991 - all women

	Model 1	Model 2	Model 3	Model 4
Constant	**21.1 (1.3)**	**27.3 (1.6)**	**26.2 (2.7)**	**29.9 (3.5)**
Social origins (base: semi/ unskilled manual)				
employers & managers	**3.8 (.9)**	**2.1 (.9)**	**2.0 (.8)**	.9 (1.0)
professionals	**6.2 (1.3)**	1.7 (1.4)	1.2 (1.2)	2.5 (1.4)
semi-professionals	**2.6 (1.2)**	.2 (1.2)	.2 (1.1)	1.1 (1.3)
routine non-manual	1.2 (1.1)	.1 (1.2)	-.8 (1.1)	.4 (1.2)
own account	.6 (1.1)	1.6 (1.2)	1.4 (1.1)	.7 (1.3)
manual foremen	1.8 (1.0)	1.7 (1.0)	1.2 (.9)	2.3 (1.2)
skilled manual	.4 (.7)	.5 (.8)	.4 (.7)	.5 (.8)
Parental education	**.8 (.2)**	.2 (.2)	---	---
Parental cultural capital	**.3 (.1)**	.0 (.1)	---	---
Ability at 11*	**.29 (.05)**	**.09 (.02)**	**.08 (.02)**	**.08 (.02)**
Respondents' cultural activities				
art	-.4 (.3)	-.2 (.2)	-.2 (.3)	**-.6 (.3)**
reading	**.8 (.2)**	**.5 (.2)**	**.5 (.2)**	**.4 (.2)**
Schools (base: comprehensive)				
grammar		-.4 (.9)	-.6 (.8)	---
direct grant/ independent		.1 (1.2)	.3 (1.1)	---
secondary modern, etc.		**-1.3 (.7)**	**-1.2 (.6)**	---
Qualifications before first job (base: no qualifications)				
degree		**22.5 (1.3)**	**21.8 (1.3)**	**18.2 (1.7)**
post A-level		**20.5 (1.2)**	**18.6 (1.2)**	**16.7 (1.5)**
A-level		**10.0 (1.2)**	**9.9 (1.1)**	**8.1 (1.4)**
O-level		**5.2 (.9)**	**4.9 (.9)**	**4.8 (1.1)**
CSE, etc.		1.9 (1.0)	1.7 (.9)	2.5 (1.1)
Industrial sectors of first job (base: primary production)				
Professional			**5.3 (2.4)**	3.5 (2.9)
Public administration			3.7 (2.5)	2.0 (3.0)
Private administration			3.6 (2.4)	3.1 (2.9)
Public services			2.9 (2.7)	2.5 (3.2)
Private services			2.5 (2.4)	1.9 (2.9)
Process			2.1 (2.5)	.9 (2.9)
trade			1.8 (2.4)	1.7 (2.8)
craft			1.1 (2.8)	.9 (3.6)
manufacturing			1.8 (2.4)	.1 (2.9)
Size of establishment of 91 jobs				
large firms				**2.6 (.6)**
Part-time work				**-7.5 (.6)**
First Job score*				**.09 (.01)**
Change of sector				-.9 (.6)
Qualifications since1981				**3.8 (.7)**
Adjusted R^2	.15	.31	.31	.40
Explained sums of squares	135016	208417	230070	158536
Degrees of freedom	12	20	27	29
N	3495	2597	2991	1661

Figures in brackets after the unstandardized coefficients give the standard errors.
Significant coefficients are shown in bold. Two decimal places are given for the coefficients of 'ability' and 'first job score' because of the small standard errors.

Perhaps the most interesting finding in the women-only models is the major effect of part-time work. As shown in Table 7.6.3, controlling for all other variables, having a part-time job reduces their job scores by over seven points. This may contribute to the explanation of the gender gap between men and women. Moreover, a repeated pooled analysis (not reported) containing only men and women full-time workers showed that the gender effect is no longer significant. This suggests that the occupational disadvantage suffered by women is largely due to part-time work.

In summary, the regression results suggest that not only do qualifications before first jobs have direct major effects on promotion, but new qualifications gained after 1981 are also important. The effects of initial qualifications on promotion were indeed reduced once first job attainment was controlled. Thus empirical evidence lends strong support to both hypotheses 1 and 2. The results also show that promotion is highly dependent on first job attainment, indicating that the original educational success had helped respondents to maintain their initial advantage. In other words, formal qualifications also had an indirect effect on promotion via first job.

At a glance, the effects of formal qualifications on promotion for men and women are remarkably similar. Among the two ascriptive factors, social origins and gender, the influence of the former on respondents' job attainment in 1991 is somewhat mediated by qualifications and first job attainment. However, the occupational disadvantage women experienced was in fact greater at the age of 33, as compared with that of the first job, though this is largely related to part-time employment of women workers. Perhaps the more surprising finding is the persistent effect of respondents' *scholarly* cultural activities on women's job attainment. We expect reading activities to be positively related to educational attainment and this is

confirmed by the findings in Chapter Three. However, it is unclear why the same effect does not persist for men.

There is no clear pattern in the structural factors on 1991-job attainment. Firm size remains an important factor in promotion for individuals but the effect of first job industrial sector is largely insignificant. Although male respondents in private administration gained an advantage in their 1991 job-scores, this advantage quickly disappears when recruitment and further qualifications are taken into account. In contrast, men in process and manufacturing sectors are worse off than their peers in the agricultural sector in promotion. No difference in the level of promotion is found among women. This may indicate that the promotion chances in different sectors are not quite the same for men but are highly similar for women. However, respondents who changed sectors are worse off in their job scores than those who stayed in the same sector. This lends support to hypothesis 3 that the change of sector has a negative effect on promotion.

Graduates' occupations in 1991

It has been established that the occupational disadvantage in promotion suffered by women is largely due to part-time work. We have also seen earlier (Table 7.2) that a lower proportion of graduate women worked part-time than all female respondents (20 per cent as compared to 32 per cent). How pronounced is this disadvantage among female graduates? If they were to suffer from poorer promotion chances, to what extent can this disadvantage be explained by the degree subject they chose? Does degree subject of their first degree have any effect on their occupational attainment in 1991? As I have discussed earlier, graduates with non-vocational degrees usually acquire further professional or vocational qualifications. In other words,

graduates with degrees that have a diffuse relationship with the labour market may want to strengthen this link by acquiring vocational or professional qualifications in their further studies. We expect that a more job-specific qualification will lead to better occupational returns. Thus it could be hypothesised that a change in the subject will increase their promotion chances.

The analysis in Chapter Four indicated that graduates who got jobs related to their degree subjects enjoyed a major advantage over those who got jobs in unrelated fields. It was argued that the importance of vocational relevance is greatest at the point of labour market entry. This importance will decrease over time when other forms of human capital (such as work experience, ability to work with other people and personal resources) become more important in the later stages of one's career. A further hypothesis can therefore be developed - the effect of related occupation on promotion will be much smaller than that on recruitment.

As was discussed in Chapter Four, the NCDS graduates faced one of the worst labour markets at the time of their graduation. Consequently, a high percentage of them had taken up low-level jobs or even became unemployed. How did they fare in their jobs a decade or so later? Those who were unemployed for a while might have obtained more qualifications. Do increased qualifications help achieving higher job scores? Moreover, some graduates may have also changed industrial sector, especially those who took up causal employment or low-level jobs to avoid unemployment in the early 1980s. What impact does the change of industrial sector have on graduates' occupational attainment in 1991? The next section will attempt to answer these questions by modelling the Hope-Goldthorpe occupation scores of graduates in 1991.

To sum up, in addition to the three hypotheses in the previous section, the multivariate analysis for graduates also aims to test two extra hypotheses (4) the

change of subject will be beneficial to promotion chances for graduates. (5) The effect of related occupation on promotion will be smaller than its effect on recruitment due to the decreasing importance of vocational relevance.

Regression of graduates' 1991 job scores

In the following section, linear regression models are repeated for the graduates. Most background variables were included in the initial analysis of graduates' occupational attainment in 1991. As none of the factors such as parental education, school or cultural capital reaches statistical significance, these results are not reported. Following the recoding procedure of social origins of graduates in Chapter Four, the eight social origins are collapsed into three categories: high, middle and low. Apart from the change of industrial sector, additional variables measuring change of subject since 1981 and related occupation are introduced in the graduate-only models. Again, the recoding procedure remains the same as that in Chapter Four where the subjects of graduates' highest qualifications are matched with their occupations in 1991 (e.g. Medicine with doctors, Education with teaching). The results of the all graduate models are presented in Table 7.7.1. Again, separate analysis for male and female graduates are detailed in Tables 7.7.2 and 7.7.3.

Unlike first job attainment where there was no significant difference between male and female graduates, men, at the age of 33 are shown to be better off than their female peers with respect to their occupational attainment in 1991 (see Model 1 in Table 7.7.1).

Table 7.7.1: Hope Goldthorpe Scores of Jobs in 1991 - all graduates

	Model 1	Model 2	Model 3
Constant	**61.8 (1.4)**	**57.3 (2.2)**	**56.9 (2.4)**
Female	**-3.0 (.8)**	**-3.5 (.9)**	**-3.5 (.9)**
Social origins (base: low)			
high	1.5 (.9)	.8 (.9)	.8 (.9)
middle	-1.2 (1.2)	-1.1 (1.3)	-1.0 (1.2)
Degree subject (base: Social Science)			
Medicine and Law	**13.0 (1.7)**	**9.5 (2.1)**	**9.0 (2.1)**
Engineering and Technology	**4.3 (1.6)**	3.2 (1.7)	2.7 (1.8)
Science	1.8 (1.4)	1.5 (1.4)	.9 (1.4)
Accounting, Administration	.9 (1.7)	-.4 (1.8)	-1.1 (1.8)
Humanities	.3 (1.5)	.9 (1.6)	.7 (1.6)
Creative arts	**-6.7 (2.1)**	**-9.9 (2.4)**	**-10.2 (2.4)**
Education	-1.9 (1.5)	-.8 (1.5)	-1.8 (1.5)
Miscellaneous vocational	2.4 (1.6)	1.5 (1.6)	1.2 (1.6)
Industrial sector of first job (base: services)			
professional	**2.2 (1.1)**	1.0 (1.2)	.9 (1.2)
Public administration	.6 (1.8)	.5 (1.9)	.6 (1.9)
Private administration	2.1 (1.3)	2.4 (1.4)	2.2 (1.4)
Process	.1 (1.4)	1.5 (1.6)	1.7 (1.6)
Manufacturing	-1.8 (1.3)	-.8 (1.4)	-.5 (1.4)
Size of establishment of 91 job (dummy)			
Large firms		1.0 (.9)	.9 (.9)
First job score*		**.08 (.02)**	**.07 (.03)**
Qualification since 81		**1.7 (.8)**	1.9 (1.1)
Change of sector			.1 (.9)
Change of subject of study			-.8 (1.2)
Related occupation			**2.7 (.8)**
Adjusted R^2	.17	.16	.17
Explained Sums of squares	19374	12514	13470
Degrees of freedom	16	19	22
N	810	612	612

Figures in brackets after the unstandardized coefficients give the standard errors. Significant coefficients are shown in bold. *Two decimal places are given for the coefficients of 'ability' and 'first job score' because of the small standard errors.

Interestingly, although medical and law graduates continue to obtain higher occupational scores, these results do not indicate a clear advantage enjoyed by graduates with job-specific degrees. For instance, those with degrees in Accounting, Administration, and Miscellaneous Vocational subjects are not significantly different from the social scientists and even graduates with Humanities degrees. Hence, the privileges enjoyed by doctors, lawyers and engineers may not only be due to the job-specific nature of their discipline. Rather this may be related to the protective

regulations set by individual professional bodies. In other words, the highly regulated number of freshly graduated professionals protects their privileged positions.

On the other hand, graduates who started their first jobs in the professional sector obtained higher job attainment in 1991. The gap between private administration and manufacturing is even bigger. As shown in Model 1, graduates in private administration enjoyed nearly 4 points extra in their 1991-job scores, compared with their peers in manufacturing industry.

In the second model, respondents' first job scores and qualifications since 1981 are introduced, and both factors are significant to job scores in 1991. The size of establishment of graduates' jobs in 1991 is also included in the model but this proves to be insignificant. The effects of initial degree subjects are somewhat reduced after first job scores and new qualifications obtained since 1981 are controlled for. This finding to a large extent supports the hypothesis that the importance of initial qualification reduces when first job is taken into account. The only exception is graduates in Creative Arts. The extra point in job scores (in Model 2) gained via new qualifications cannot be compensated by the disadvantage of having a degree in Creative Arts. This suggests that degree subject still has a strong influence on graduates' later work life.

Change of sector and subject groups are introduced in the third model. Rather surprisingly neither change has any significant effects on graduates' occupational attainment in 1991. These findings thus reject the hypotheses that changing sectors has a negative effect on promotion and that changing subjects will increase promotion chances. It is possible that the movements between sectors are driven by factors not associated with better prospects and/or higher pay. As we have seen most graduates with non-vocational first degrees were more likely to study different subjects than

graduates with more job-specific degrees. The fact that the change of subject in further qualifications since 1981 did not increase job attainment may indicate a decreasing importance of vocational relevance of qualifications. As graduates gradually rise to managerial and more senior positions, other factors such as personal and transferable skills may become more important as compared to technical skills and knowledge that they received from their qualifications.

None the less, related occupation brings an advantage to their 1991-job scores by only two points, a much smaller effect of as compared to that on their first jobs, which brought a 14-point advantage. As past research has suggested (Witte and Kalleberg, 1995), the importance of vocational relevance of training is usually stronger at earlier stages of an individual's career, especially in his/her first job, and this importance may decrease over time. On the whole, these results highlight interesting differences in the impact of subject specialisation on promotion chances.

While the pooled analysis in Table 7.1.1 clearly shows a female disadvantage in graduates' occupational attainment in 1991, it does not tell us whether the occupational returns to different degree subjects are different for men and women. Now let us move on to separate models for male and female graduates. Results are presented in Table 7.7.2 and Table 7.7.3. The disadvantage suffered by female graduates is reflected by the lower constant terms in the separate analyses for women as compared to those of men.

For male graduates, a high social origin (i.e. those whose fathers were employers, managers, professionals and semi-professionals) is favourable to obtain

promotion as shown in Model 1. However, the effects of social origins do not reach statistical significance for female graduates.[18]

Table 7.7.2: Hope Goldthorpe Scores of Jobs in 1991 - male graduates

		Model 1	Model 2	Model 3
Constant		**61.6 (1.8)**	**59.7 (2.7)**	**60.9 (2.9)**
Social origins (base: low)				
	high	**3.3 (1.2)**	1.7 (1.2)	1.6 (1.2)
	middle	-1.5 (1.5)	-2.7 (1.5)	-2.4 (1.5)
Degree subject (base: Social Science)				
	Medicine and Law	**9.6 (2.0)**	4.2 (2.4)	3.1 (2.4)
	Engineering and Technology	1.7 (1.9)	.1 (1.9)	-.7 (1.9)
	Science	-.2 (1.8)	-.9 (1.7)	-1.4 (1.7)
	Accounting, Administration	-.9 (2.1)	-2.1 (2.1)	-3.2 (2.1)
	Humanities	-1.8 (2.4)	-1.2 (2.6)	1.1 (2.6)
	Creative arts	**-14.8 (3.1)**	**-17.0 (3.1)**	**-18.0 (3.1)**
	Education	**-6.4 (2.2)**	**-5.7 (2.1)**	**-7.0 (2.1)**
	Miscellaneous vocational	3.4 (2.2)	1.1 (2.2)	.9 (2.2)
Industrial sectors of first job (base: services)				
	professional	**4.8 (1.6)**	1.5 (1.7)	1.4 (1.7)
	Public administration	1.9 (2.3)	-1.0 (2.4)	-.9 (2.4)
	Private administration	2.2 (1.6)	1.5 (1.6)	1.0 (1.6)
	Process	1.8 (1.8)	2.0 (1.9)	2.3 (1.9)
	Manufacturing	.8 (1.6)	1.6 (1.6)	2.0 (1.6)
Size of establishment of 91 job (dummy)				
	Large firms		.2 (1.3)	-.4 (1.3)
1st job HG score			**.1 (.0)**	**.1 (.0)**
Qualification since 81			1.4 (1.0)	2.4 (1.4)
Change of sector				-.6 (1.2)
Change of subject of study				-2.0 (1.5)
Related occupation				**2.3 (1.1)**
Adjusted R^2		.21	.21	.22
Explained Sums of squares		11780	6177	6621
Degrees of freedom		15	18	21
N		405	290	290

Figures in brackets after the unstandardized coefficients give the standard errors. Significant coefficients are shown in bold.

The effects of first degree subjects on 1991-job scores appear to be different for men and women. As can be seen from Model 1 in Table 7.7.3, unlike men, female graduates with first degrees in Medicine and Law obtain a 17-point advantage in their 1991-job scores when compared to social scientists, whereas the scores of their male

[18] A formal test of interaction effect shows that the effect of high social origin on promotion does not vary significantly between male and female graduates after controlling for all other variables (Model 3).

peers only benefit by ten points. As far as promotion chances are concerned, Model 3 shows that women with first degrees in Creative Arts achieved similar scores to the Social Scientists. However, male graduates with first degrees in Creative Arts are much worse off than male Social Scientists – with an 18 points reduction in their job scores. A formal test of interaction effect between degree subjects and gender shows that female graduates in Medicine and Law, Creative Arts and Education are significantly better off in promotion chances.[19]

Table 7.7.3: Hope Goldthorpe Scores of Jobs in 1991 - female graduates

	Model 1	Model 2	Model 3
Constant	**59.0 (2.1)**	**53.4 (3.3)**	**60.6 (3.7)**
Social origins (base: low)			
high	-.5 (1.4)	-.1 (1.5)	1.4 (1.5)
middle	-1.7 (1.9)	.2 (1.5)	1.7 (2.0)
Degree subject (base: Social Science)			
Medicine and Law	**17.2 (2.8)**	**15.4 (3.6)**	**14.6 (3.8)**
Engineering and Technology	6.8 (3.9)	4.2 (4.3)	3.0 (4.1)
Science	3.3 (2.2)	2.6 (2.3)	2.0 (2.4)
Accounting, Administration	3.0 (2.8)	.8 (2.9)	1.9 (2.9)
Humanities	2.4 (2.0)	3.0 (2.2)	**4.9 (2.2)**
Creative arts	-.3 (3.0)	-3.3 (3.6)	-1.1 (3.8)
Education	.9 (2.0)	1.9 (2.1)	.02 (2.1)
Miscellaneous vocational	2.3 (2.3)	1.9 (2.1)	.63 (2.4)
Industrial sectors of first job (base: services)			
Professional	.8 (1.4)	1.0 (1.8)	-.5 (1.8)
Public administration	-.1 (2.6)	1.4 (2.8)	-3.4 (2.7)
Private administration	2.4 (2.0)	3.4 (2.2)	2.2 (2.3)
Process	-.8 (2.3)	1.8 (2.6)	2.3 (2.7)
Manufacturing	**-5.5 (2.3)**	**-5.6 (2.5)**	**- 10.0 (2.5)**
Size of establishment of 91 job (dummy)			
Large firms		1.8 (1.3)	1.0 (1.3)
Part-time work			-2.5 (1.4)
1st job HG score		.1 (.1)	-.0 (.1)
Qualification since 81		1.9 (1.2)	1.7 (1.8)
Change of sector			.1 (1.4)
Change of subject of study			-.7 (1.9)
Related occupation			1.4 (1.3)
Adjusted R^2	.11	.10	.16
Explained Sums of squares	7511	5690	5384
Degrees of freedom	15	18	22
N	404	321	242

Figures in brackets after the unstandardized coefficients give the standard errors. Significant coefficients are shown in bold.

[19] Female graduates in Medicine and Law gained an advantage of 8.5 points, those in Creative Arts and Education gained 11 points and 5 points in their job scores. All coefficients were significant at .02 confidence level.

The apparently surprising result that new qualification obtained since 1981 (as shown in Model 3) has no significant effect on either male or female graduates' promotion chances may be related to the small number of cases included in the separate analysis of men and women. Or it may be that further qualifications just led to promotion with broad Hope-Goldthorpe categories. For example, doctors with further professional qualifications are still doctors, but in more senior capacities, such as Registrars, as compared to their peers who did not have further qualifications. In other words, the occupational coding may be too broad to capture these effects.

As for first job industrial sector, male graduates in the professional sector gained nearly five points more in their job scores than their peers in the service sectors. However, this advantage disappears after first job score is included in the analysis (see Models 2 and 3). On the other hand, having a first job in the manufacturing sector is shown to be negative for female graduates' promotion chances. A formal test of the interaction effect between first job sectors and gender shows that women are significantly worse off than men in getting promotion in this sector.[20]

Similar to the results found in the previous sets of regression models for all respondents, a major and significant effect of first job scores on their 1991-job scores is found for male graduates but not for their female peers. This may be because women are more likely to be absent from the labour market for a certain length of time between graduation and 1991, due to childbearing and responsibilities associated with family formation.

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[20] Female graduates in manufacturing industries suffered lower job scores in 1991 by 7 points. The result was significant at .01 confidence level.

Perhaps the most interesting of these findings is the insignificant effect of part-time employment on promotion among female graduates. Compared with the results for all female respondents in the previous section who *do* suffer from lower occupational attainment due to part-time employment, part-time work seems to be less damaging to the occupations of better qualified women (See Dale and Egerton, 1995). However, the net effect of gender in the pooled analysis suggests that the lower occupational attainment of female graduates in general may be related to factors unrelated to part-time employment. Furthermore, the separate analyses show that degree subject has different effects on promotion for men and women.

Summary and Conclusion

In this chapter, the changes related to the qualifications and occupations since the first jobs of the NCDS respondents' were first described. The discussion pointed to a dynamic picture of educational and occupational attainment between respondents' first jobs and their 1991 jobs. Whilst most men stayed in full-time employment and achieved different degrees of career mobility depending on their qualifications, a third of all female respondents only worked part-time in 1991. Not only did some respondents acquire more qualifications since 1981, there was also considerable movement between industrial sectors for both men and women.

Five hypotheses were developed. First, it was hypothesised that the effects of initial qualifications on 1991 job scores will be reduced once first job scores are taken into account. Second, increased qualifications since 1981 was expected to bring higher promotion chances in 1991. Third, the change of industrial sector is expected to have a negative effect on promotion. Fourth, the change of subject in new qualifications for

the graduates is beneficial to their promotion chances. Finally, entering a related occupation will bring less advantage to promotion than to recruitment as the importance of vocational relevance will decline. Results of the multivariate analyses, to a large extent, support these hypotheses. The direct effect of initial qualifications on promotion decreased but their indirect effects continued to influence job attainment in 1991 via first job attainment. Increased qualifications since 1981 were also beneficial to promotion. However, as was hypothesised, the change of industrial sectors has negative effects on promotion.

Formal qualification entailed a double advantage in the careers of the NCDS cohort. First, it had helped them get better first jobs. Second, even when the job at start was the same, those with more education had more promotion. However, as we have seen, the relationship between qualifications and occupational success is not a simple hierarchical one.[21] The returns to qualifications only increased dramatically above A level standard. Although the effect of formal qualification on promotion was remarkably similar for men and women, men continued to maintain their advantage over women in promotion. In fact, the gender gap was widened in promotion as compared to that for recruitment. Nevertheless, the results suggest that the occupational disadvantage suffered by women is largely due to part-time employment (except for female graduates).

A more puzzling finding is the influence of cultural capital. Its effects on both first job and 1991-job attainment are largely mediated by qualifications except respondents' scholarly cultural activities, whose effects persist after controlling for other background and structural variables. A developed good reading habit appears to

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[21] See also Heath and Cheung (1997) for similar finding.

be beneficial to occupational success. This may be an indication of higher motivation and initiative of individuals, which help shape their work attitudes throughout their career.

The analysis of graduates in the final section of this chapter tells a number of different stories. Female graduates obtain lower occupational attainment at the age of 33. First job attainment is shown to be significant for men but not for women. It is possible that female graduates did not have a full-time and unbroken employment career since their first jobs.[22] This may also explain the lower occupational attainment of women in jobs at 33. Qualifications gained since 1981 and the change of subject of study had not brought significant advantages in occupational returns. Moreover, the industrial sectors of first job did not affect graduates' job attainment in 1991, with the only exception of female graduates in manufacturing who suffered from a lower return. This may indicate the limited prospects and lack of opportunities in a declining industry and this effect was felt more by women than men.

Degree subjects continued to have significant impacts on graduates' occupational attainment at the age of 33. The advantage enjoyed by graduates with first degrees in Medicine, Law and Pharmacy is seen to be highly persistent. In contrast, both male and female graduates with first degrees in Creative Arts, and male graduates in Education were much worse off, whereas women in Humanities had higher occupational returns than Social Scientists.

Whether or not the degree subject has a specific or diffuse relationship with the labour market is no longer a decisive factor in occupational attainment at age 33. It is evident that graduates in Humanities and Social Science are not significantly different

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[22] This begs the need for further investigation of female's work history since first jobs.

from their peers in Accounting, Administration and Management. Important findings on gender difference show that initial degree subject has a very different effect on men and women's occupational attainment in 1991. Female graduates in Medicine and Law, and in Humanities were much better off than their peers in Social Science, whereas men in Creative Arts and Education suffered from lower occupation scores in 1991. This confirms the findings of previous research that highly qualified women are getting ahead (Crompton and Sanderson, 1990), even in areas that are traditionally dominated by men such as Medicine, Law, Pharmacy and Dentistry.

The occupational advantage maintained by graduates in Medicine and Law may be a result of the more established practices of elite professional groups fending off growing numbers of well qualified people entering the labour market[23] (Halsey, 1993; Brown, 1995), rather than a result of a more job-specific degree. The importance of a related occupation is seen to have decreased as compared to its effect on first jobs. This confirms the belief that vocational relevance is most important at the start of a career and erodes over time as accumulated work experience, the ability to work with people and other personal traits become more important.

Finally, the findings in this chapter show that the importance of qualifications (a human capital factor) has not diminished since first job. In contrast, the influences of structural factors such as firm size and industrial sectors have decreased over time.

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[23] Most 'elite' professions such as doctors, lawyers and chartered accountants have their own professional qualifying examinations in addition to degree qualifications.

Chapter Eight

Meritocracy in industrial sectors - Promotion

While the analysis in Chapter Seven established that both initial qualification and new qualification since 1981 had strong effects on promotion, it did not tell us how these effects varied between industrial sectors. We have seen from the disaggregated analysis of first jobs in Chapter Six that meritocracy did not operate to the same extent in different industrial sectors. More specifically, the effects of qualifications on respondents' first jobs were found to be particularly large in the professional and administrative sectors for men. However, the public and private administrative sectors were paradoxically the least universalistic sectors with respect to gender equality at the point of recruitment. Women, including graduates, were most disadvantaged in having lower first job scores than equally qualified men on recruitment in private administration. Chapter Six also showed that meritocracy was more developed in large organisations than in small firms.

Ten years on, how far does the impact of formal qualification (both initial qualification and qualification since first job) on promotion vary between sectors in 1991? Do women continue to suffer from lower attainment than equally qualified men in the more bureaucratised sectors? We have seen in Chapter Seven that, with respect to their promotion chances, all female respondents were seriously affected by working part-time in 1991. Are their promotion chances likely to vary between industrial sectors? Are women in the less bureaucratised sectors (such as private service and manufacturing) more likely to be penalised because more of them worked part-time? Will large firms continue to be more meritocratic in their promotion practices?

This chapter aims to examine the extent to which the effects of formal qualifications on respondents' 1991-jobs differ between industrial sectors. In other

words, the focus of this chapter is on *promotion* (respondents' occupational attainment in 1991, controlling for their first job attainment) as opposed to *recruitment* (respondents' first jobs). Are some sectors more meritocratic than others in their promotion practices? Since qualifications had major effects on recruitment in the more bureaucratised sectors such as the professional and administrative sectors, we expect that formal qualifications will continue to have bigger effects on promotion in these sectors. On the other hand, we know from the analysis in the last chapter that education also has an indirect effect on promotion via first job. Since formal qualifications had bigger effects on first job attainment in the more bureaucratised sectors, it is possible that first job scores also have bigger effects in the more bureaucratised sectors.

In short, the hypotheses I shall test in this chapter are:

1. Initial qualifications have bigger and positive *direct* effects on promotion in the more bureaucratised sectors such as the professional and the administrative sectors than sectors which are less bureaucratised.
2. Initial qualifications also have bigger and positive *indirect* effects via first job on promotion in the more bureaucratised sectors than sectors which are less bureaucratised. That is, first job scores have bigger effects in these sectors.
3. New qualifications obtained since 1981 will also have a bigger effect in the more bureaucratised sectors.
4. The effect of full-time work on promotion will be bigger in the less bureaucratised sectors where part-time employment prevails. That is, women in part-time work will be penalised more in these sectors because of working part-time.
5. Initial and new qualifications have bigger effects on promotion in large firms than in small ones, indicating a more developed meritocracy in large firms.

For the NCDS graduates, a further hypothesis is developed: 6. since different sectors may need different specialised skills and knowledge, the effect of degree subject on promotion will vary between sectors.

As in Chapter Six, separate models are run for the ten sectors and for men and women. The following analyses will be in two parts. In part one, all respondents are included in the analysis whereas part two covers graduate-only models.

Table 8.1.1: Effects of Qualifications on First Jobs and 1991-Jobs by Sector (Male respondents)

	First Job Scores									
Industrial sectors of First Jobs	**professional**	**public administration**	**private administration**	**public services**	**private services**	**process industry**	**trade**	**craft industry**	**manufacturing**	**primary production**
constant	**28.3 (8.3)**	**32.3 (6.3)**	**27.8 (8.1)**	**19.7 (5.6)**	**19.1 (7.8)**	**30.1 (3.9)**	**32.4 (3.1)**	**31.9 (2.2)**	**27.2 (2.3)**	**29.5 (2.4)**
Qualifications (base category: no qualifications)										
degree	**26.3 (6.9)**	**20.8 (6.2)**	**31.7 (5.8)**	**19.9 (5.8)**	7.6 (5.9)	**18.3 (3.8)**	**17.6 (3.7)**	**11.5 (2.8)**	**21.8 (2.5)**	5.9 (3.2)
Post A Level	**21.7 (6.6)**	10.3 (5.9)	**24.7 (6.0)**	**18.2 (4.5)**	2.9 (6.4)	**21.2 (3.5)**	**9.2 (3.7)**	**5.7 (1.9)**	**12.5 (1.8)**	-.4 (2.7)
A level	**14.1 (7.1)**	8.4 (4.6)	**11.6 (5.7)**	**12.4 (4.2)**	7.0 (5.2)	**7.6 (2.5)**	**7.6 (2.2)**	**3.9 (1.4)**	**6.6 (1.5)**	.2 (1.9)
O level	8.2 (7.1)	**11.3 (4.2)**	10.5 (5.7)	**13.0 (3.9)**	.2 (5.1)	**5.8 (2.5)**	**5.5 (1.9)**	**2.8 (1.4)**	**5.3 (1.4)**	1.0 (1.7)
CSE, etc.	13.6 (9.9)	3.1 (4.8)	10.4 (7.0)	2.6 (4.1)	5.5 (5.1)	3.2 (2.6)	2.8 (1.9)	1.3 (1.5)	2.4 (1.5)	-.3 (1.6)

	1991-Job Scores									
Industrial sectors of jobs in 1991	**Professional**	**public administration**	**private administration**	**public services**	**private services**	**process industry**	**trade**	**craft industry**	**manufacturing**	**primary production**
Constant	**28.9 (5.6)**	**35.2 (4.9)**	**36.3 (4.5)**	**31.8 (4.4)**	**34.8 (5.2)**	**26.9 (4.0)**	**33.5 (4.1)**	**24.3 (2.8)**	**27.6 (2.8)**	**21.6 (7.3)**
Qualifications (base category: no qualifications)										
degree	**24.7 (4.0)**	**21.5 (4.3)**	**20.4 (4.2)**	**25.4 (6.5)**	**21.2 (5.9)**	**23.8 (4.4)**	**23.0 (5.6)**	**22.2 (5.1)**	**22.5 (3.7)**	---
Post A Level	**23.8 (4.0)**	**22.6 (4.5)**	**19.3 (4.2)**	**19.5 (4.1)**	**19.6 (5.1)**	**17.4 (3.9)**	**10.0 (4.9)**	**21.2 (2.7)**	**15.4 (2.6)**	15.5 (9.0)
A level	**20.0 (3.9)**	**15.1 (4.0)**	**18.1 (3.7)**	**16.3 (3.2)**	**15.7 (4.9)**	**11.5 (3.0)**	**12.7 (3.5)**	**12.8 (2.0)**	**11.2 (2.0)**	16.4 (4.6)
O level	**11.7 (4.1)**	**13.7 (3.9)**	**13.4 (3.8)**	**11.4 (2.8)**	**10.8 (3.9)**	**8.7 (2.8)**	**10.2 (3.2)**	**7.6 (2.0)**	**8.7 (1.9)**	7.6 (5.5)
CSE, etc.	-2.0 (4.7)	8.0 (4.5)	-1.2 (4.8)	3.1 (2.7)	4.2 (4.3)	2.5 (3.0)	.2 (3.4)	**4.6 (2.0)**	2.5 (2.0)	4.4 (5.7)

Standard errors are given in parenthesis and significant coefficients are given in bold.
These figures are extracted from the full models in Tables 6.2.1 and 8.1.2.

Figure 8.1: Fitted HG scores of first job by qualifications and industrial sector (men)

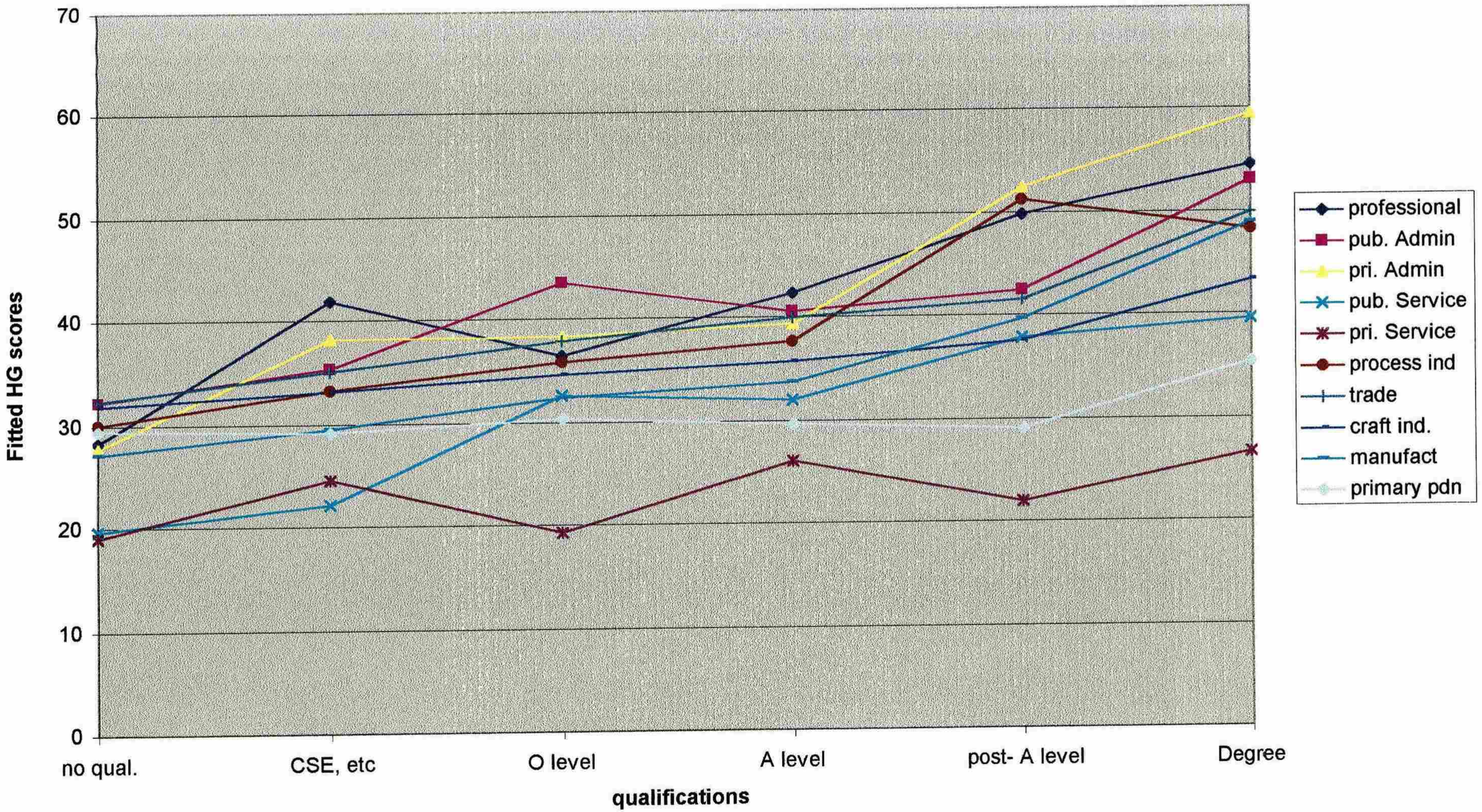
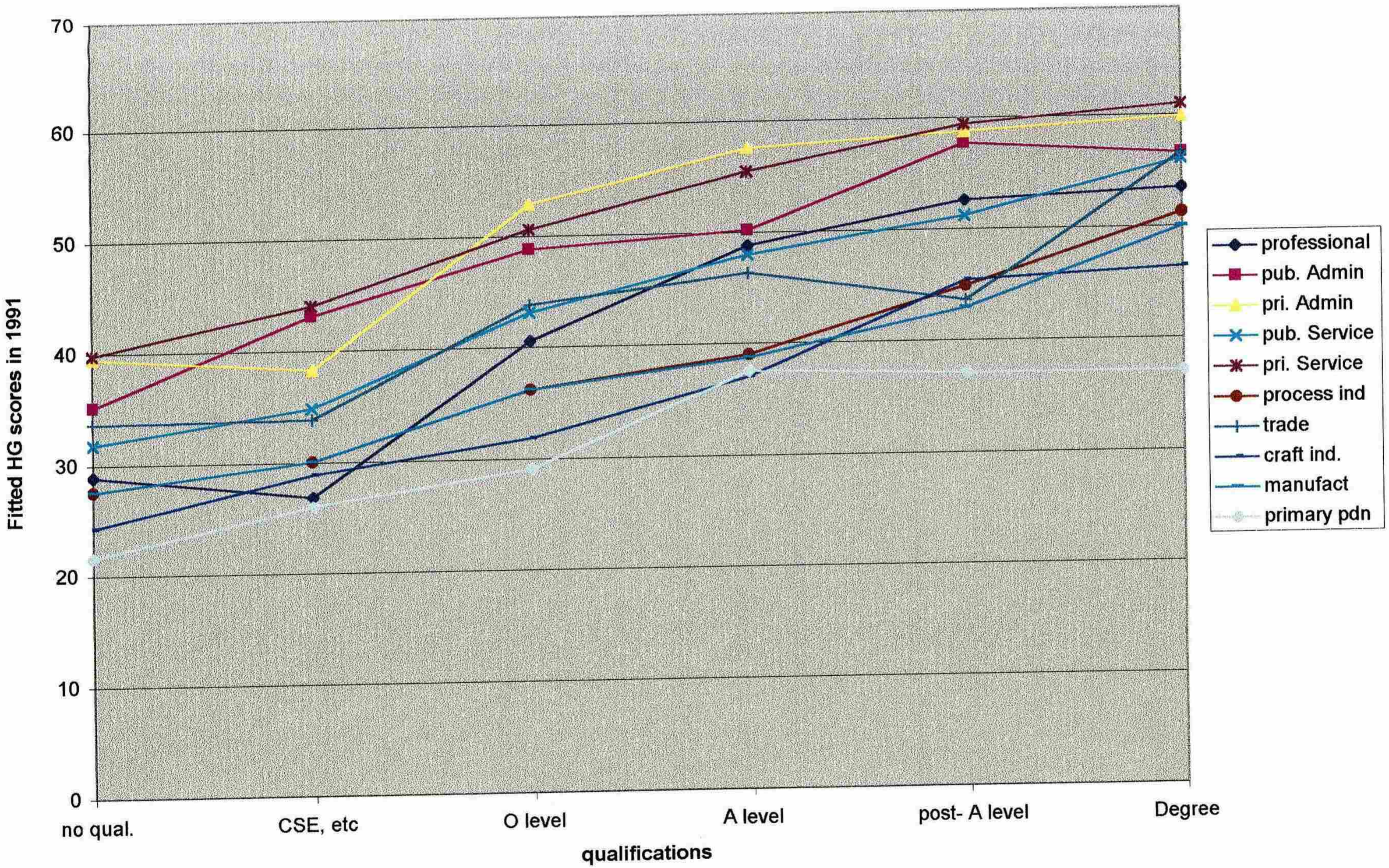


Figure 8.2: Fitted HG scores of 1991 jobs by qualifications and industrial sectors (men)



Sectoral difference in promotion – male cohort members

Table 8.1.1 presents the regression results of the ten regression models of each industrial sector in 1991. Variables measuring qualifications, social origins, first job attainment, qualifications since 1981 and change of sector are included in the analysis. Although the main effects of qualifications have been discussed in Chapter Seven, a comparison of respondents' first job scores and their 1991-job scores will tell us the increase of job scores as a result of promotion in each individual sector. A summary table of the net effects of qualifications on first jobs and 1991-jobs at this point is instructive to look at the change over time. The figures in Table 8.1.1 are extracted from the full models in Tables 6.2.1 and 8.1.2 where social origins, first job scores, qualifications since 1981, change of sectors and firm size of the 1991-jobs are controlled for.

If we compare the effect of qualification on promotion (job scores in 1991) to that on recruitment (first job scores) between industrial sectors, we expect to see that the qualification/job slopes continue to be less steep for the less bureaucratised sectors (such as private services and trade industries). From Table 8.1.1, we can see, for example, that a degree qualification in private administration – banking and finance – brings an advantage of 32 points to men's first job scores but this advantage is only 20 points in the models for their jobs in 1991 (see also Figures 8.1 and 8.2). The reduction of the direct effect of initial qualification is largely due to the inclusion of first job scores and new qualifications since 1981. Although the qualification/job slopes in the professional and the private administrative sectors in the upper panel of Table 8.1.1 are steeper than those in other sectors, the effects of initial qualifications in the lower panel are actually much the same for all industrial sectors, except for the primary sector. Primary production remains the least meritocratic sector at both

recruitment and promotion since neither initial nor new qualification has any significant effect on first job and 1991-job scores (see both Tables 8.1.1 and 8.1.2). Thus there is no evidence to suggest that the more bureaucratised sectors are more 'meritocratic' in promoting their staff. The direct effects of initial qualifications on promotion chances are highly similar across industrial sectors and hypothesis one is therefore rejected.

The effects of non-meritocratic factors on promotion (see Table 8.1.2) do not seem to have any clear pattern for men. Social origins do not have any significant effects on job promotion in public and private administration; and more surprisingly, not even in primary production. The effects of social origins are likely to have been filtered via first job. However, the direct effects of entrepreneurial and managerial backgrounds are still statistically significant in private services, trade, craft and manufacturing. An own account background also brings some advantage for respondents working in the professional and craft sectors. Yet, their peers from the same background in the process industry are seen to be worse off.

From Table 8.1.2, we can also see that the effects of first job scores are rather different. First job scores have direct and significant effects on job scores ten years later in most sectors except in private services and primary production. This suggests that initial qualifications had indirect effects via first jobs on later jobs in these sectors. That is, qualifications help respondents get better first jobs and subsequently to have better jobs later in their careers. Moreover, there is no evidence that first job scores have bigger effects on later attainment in the more bureaucratised sectors such as the professional and the administrative sectors. In fact, the biggest effects of first job scores are found in the process and the craft industries. Hypothesis two is therefore not supported.

The effects of new qualifications obtained since 1981 on promotion also vary between sectors. Only men working in the professional, craft and manufacturing sectors in 1991 benefited from qualifications obtained since 1981. It is true that new qualifications gained since 1981 have bigger effects on promotion in the professional sectors but their effects are insignificant in both the public and private administrative sectors. Thus the hypothesis (hypothesis three) that new qualifications gained after 1981 have bigger effects on promotion in the more bureaucratised sectors is only partially supported.

We have seen in the last chapter that change of sector has a significant negative influence on promotion chances. The disaggregated analysis allows us to look at this effect in individual sectors. Table 8.1.2 shows that respondents who moved to public services in 1991 are found to have lower job scores (by 5 points) as compared to those who stayed in the same sector. In contrast, those who moved to the manufacturing sector in 1991 benefit from a small improvement in their occupational attainment. However, the disaggregated analysis shows that the change of sector is largely insignificant in most sectors.

Table 8.1.2: Regression of 1991 job scores in ten industrial sectors – all male respondents

Industrial sectors (1991)	Professional	public administration	private administration	public services	private services	process industry	trade	craft industry	manufacturing	primary production
Constant	**28.9 (5.6)**	**35.2 (4.9)**	**39.5 (4.6)**	**31.8 (4.4)**	**39.9 (5.5)**	**27.6 (4.2)**	**33.7 (4.4)**	**24.3 (2.8)**	**27.6 (2.8)**	**21.6 (7.2)**
Qualifications (base category: no qualifications)										
degree	**24.7 (3.9)**	**21.5 (4.2)**	**20.4 (4.2)**	**25.4 (6.5)**	**21.2 (5.9)**	**23.8 (4.4)**	**23.0 (5.5)**	**22.2 (5.1)**	**22.5 (3.7)**	---
Post A Level	**23.8 (3.9)**	**22.6 (4.5)**	**19.3 (4.2)**	**19.5 (4.1)**	**19.6 (5.1)**	**17.4 (3.9)**	**10.0 (4.8)**	**21.2 (2.7)**	**15.4 (2.6)**	15.5 (9.0)
A level	**20.0 (3.8)**	**15.1 (4.0)**	**18.1 (3.7)**	**16.3 (3.2)**	**15.7 (4.9)**	**11.5 (3.0)**	**12.7 (3.5)**	**12.8 (1.9)**	**11.2 (1.9)**	**16.0 (4.6)**
O level	**11.7 (4.1)**	**13.7 (3.9)**	**13.4 (3.8)**	**11.4 (2.8)**	**10.8 (3.9)**	**8.7 (2.8)**	**10.2 (3.2)**	**7.6 (1.9)**	**8.7 (1.8)**	7.5 (5.4)
CSE, etc.	-2.0 (4.6)	8.0 (4.4)	-1.2 (4.8)	3.1 (2.7)	4.2 (4.3)	2.5 (2.9)	.2 (3.4)	**4.6 (1.9)**	2.5 (2.0)	4.4 (5.6)
Social origins (base category: semi or unskilled manual)										
employers & managers	n. s.	n. s.	n. s.	-n. s.	**8.3 (3.8)**	n. s.	**7.5 (3.1)**	**7.2 (1.9)**	**6.1 (1.9)**	n. s.
professionals	n. s.	n. s.	-n. s.	-n. s.	-n. s.	-n. s.	n. s.	-n. s.	n. s.	-n. s.
semi-professionals	n. s.	n. s.	-n. s.	n. s.	n. s.	-n. s.	n. s.	n. s.	n. s.	---
routine non-manual	n. s.	n. s.	-n. s.	-n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	---
own account	**11.6 (4.9)**	-n. s.	n. s.	n. s.	n. s.	**-9.0 (4.3)**	n. s.	**6.7 (2.8)**	n. s.	n. s.
manual foremen	-n. s.	n. s.	-n. s.	-n. s.	n. s.	-n. s.	n. s.	n. s.	n. s.	-n. s.
skilled manual	-n. s.	-n. s.	-n. s.	**-8.3 (2.3)**	n. s.	-n. s.	n. s.	n. s.	n. s.	-n. s.
First job scores	**.2 (.1)**	**.2 (.1)**	**.2 (.1)**	**.2 (.1)**	-.1 (.1)	**.2 (.1)**	**.2 (.1)**	**.3 (.1)**	**.2 (.1)**	.3 (.2)
Qualifications since 1981	**7.0 (1.7)**	.7 (1.6)	1.6 (1.6)	-2.1 (1.9)	1.8 (2.7)	2.4 (1.9)	3.9 (2.8)	**4.2 (1.3)**	**4.3 (1.4)**	4.7 (4.9)
Change of sector	-1.8 (2.2)	-2.4 (1.9)	-2.1 (1.5)	**-4.9 (2.0)**	-2.1 (3.2)	3.5 (1.9)	-3.2 (2.1)	1.9 (1.2)	**2.4 (1.2)**	-.7 (4.8)
Large firm in 1991	.3 (2.8)	.2 (2.3)	-2.6 (1.6)	1.2 (2.2)	-.7 (2.6)	-.9 (2.2)	.4 (2.0)	-.5 (1.5)	.9 (1.4)	2.5 (5.8)
Adjusted R^2	.59	.21	.27	.34	.28	.27	.23	.37	.33	.32
N	143	268	346	287	168	277	239	388	455	45

Standard errors are given in parenthesis and significant coefficients are given in bold. Sample: all male respondents in 1991, NCDS5 (Total N = 2616)

Sectoral difference in promotion – female cohort members

A summary table (Table 8.2.1) is again presented to report the net effects of qualifications on recruitment (first jobs) and on promotion (1991-jobs) for female respondents for each industrial sector[1]. As for men, social origins, first job scores, new qualifications since 1981, the change of sector and firm size are included in the models. However, part-time work is also introduced to the women only models.

It is readily notable from Table 8.2.1 that in sectors such as the professional, public administration and process industry, the relatively flat qualification/job slopes at recruitment become much steeper for promotion (see also Figures 8.3 and 8.4). This indicates that qualifications have much bigger effects on promotion in these sectors than other sectors, and thus lends support to hypothesis one that initial qualifications have a bigger influence on promotion in the more bureaucratised sectors. In contrast, the effects of formal qualifications remain low and largely insignificant for women in the trade, craft and manufacturing industries. These findings continue to show a less developed meritocracy in the less bureaucratised sectors such as the non-professional and non-administrative sectors, excluding the process industry.

Table 8.2.2 gives the details of the full models for each sector of women's 1991-job attainment. The disaggregated analysis further shows variations in the effects of first jobs on promotion. Unlike men, first job attainment has no significant effect in industrial sectors except in the trade and craft industries. We can also see that formal qualifications do not have direct effects on promotion in these two sectors (excluding degree holders working in the trade sector) but first job scores are significant. This has two implications: first, it means that 1991-job scores for women in the trade and craft industries depend more on where the women started at the point

[1] Primary production is removed from the analysis for the women-only models due to the extremely small number of cases (N=12).

of entry to the labour market than on their qualifications. Second, for those who started at the same level in their first jobs, more education has not brought more promotion for them. The hypothesis that first job scores will have bigger effects on promotion is therefore not supported. However, new qualifications gained after 1981 are found to have bigger effects in the more bureaucratised sectors, thus confirming the predictions of hypothesis three.

As was discussed in Chapter Seven, over 30 per cent of women worked part-time in 1991 and about one-fifth of the female graduates were also in part-time employment. It was also found in the last chapter that part-time work has a negative effect on women's promotion chances. From Table 8.2.2, we can see variations between sectors. In general, women are penalised by working part-time in most industrial sectors, except the manufacturing sector where there is no significant difference between full-time and part-time work. The disadvantage suffered by women is most severe in the craft industry and private services, and to a lesser extent in sectors including the process, professional and public administrative sectors where qualifications have bigger effects on promotion. A formal test of interaction shows that only part-time workers in the private services sector are significantly worse off than their peers working in other sectors. It has been suggested that the level of use of part-time workers varies between industrial sectors. Employers in private service sectors are more likely to use part-time workers where a high concentration of low skilled part-time workers in domestic and personal services are found (Tam, 1997). This may help explain the bigger disadvantage women suffer in the private service sector. Therefore, hypothesis four is supported to a large extent. That is, the effect of full-time work on promotion is bigger in the less bureaucratised sectors where part-time employment prevails.

Table 8.2.1: Effects of Qualifications on First Jobs and 1991-Jobs by Sector (Female respondents)

	First Job Scores									
Industrial sectors of First Jobs	professional	public administration	private administration	public service	private service	process industry	trade	craft industry	manufacturing	primary production
Constant	**35.4 (4.3)**	**32.3 (6.3)**	**39.0 (2.3)**	**25.6 (6.6)**	**30.6 (3.3)**	**30.7 (1.5)**	**32.5 (3.5)**	**34.4 (2.7)**	**33.6 (1.5)**	**24.1 (8.4)**
Qualifications (base category: no qualifications)										
degree	**11.4 (3.6)**	**10.1 (3.1)**	**16.3 (1.7)**	**20.7 (5.3)**	**15.3 (2.9)**	**11.2 (1.7)**	**14.0 (3.9)**	**12.3 (2.4)**	**11.2 (1.8)**	-9.0 (11.)
Post A Level	**9.1 (3.5)**	2.6 (2.9)	**3.3 (1.6)**	.1 (5.9)	4.2 (2.6)	**3.2 (1.3)**	7.1 (3.9)	**5.8 (2.4)**	**4.9 (1.4)**	12.1 (8.2)
A level	.4 (3.8)	1.0 (2.3)	.5 (1.4)	5.6 (4.2)	**5.8 (2.3)**	**2.5 (1.3)**	5.8 (3.1)	3.3 (2.1)	**4.9 (1.3)**	-6.5 (4.7)
O level	.6 (3.5)	2.4 (2.2)	.0 (1.3)	6.0 (3.7)	3.1 (1.9)	1.3 (.8)	**5.4 (2.1)**	1.9 (1.5)	1.1 (.7)	-1.3 (4.7)
CSE, etc.	-4.6 (3.9)	1.6 (2.8)	.8 (1.4)	5.4 (3.9)	3.1 (2.0)	1.3 (.8)	2.4 (2.2)	2.6 (1.4)	.9 (.7)	**-10.0 (4.1)**

	1991-Job Scores								
Industrial sectors of jobs in 1991	Professional	public administration	private administration	public services	private services	process industry	trade	craft industry	manufacturing
Constant	**35.2 (3.8)**	**34.9 (5.5)**	**38.5 (5.0)**	**37.3 (9.7)**	**33.8 (3.4)**	**40.7 (7.3)**	**33.8 (3.5)**	**33.8 (9.5)**	**26.7 (9.4)**
Qualifications (base category: no qualifications)									
degree	**24.6 (2.9)**	**20.4 (4.1)**	**18.2 (4.4)**	**23.9 (7.2)**	**20.9 (4.1)**	**31.5 (5.7)**	**11.9 (4.7)**	-17.5 (9.9)	-8.8 (15.8)
Post A Level	**22.6 (2.5)**	**18.4 (4.4)**	**14.8 (6.0)**	**14.6 (3.7)**	**14.8 (3.1)**	**13.9 (5.8)**	2.5 (3.9)	-17.4 (9.9)	6.7 (8.1)
A level	**15.0 (2.9)**	**12.8 (3.9)**	**7.8 (3.6)**	8.9 (5.8)	**7.3 (2.7)**	**12.8 (4.2)**	4.3 (2.9)	-12.6 (9.3)	**15.5 (6.3)**
O level	**10.2 (2.5)**	**10.1 (3.4)**	4.1 (3.2)	1.6 (4.9)	**5.2 (1.9)**	**7.3 (2.4)**	2.0 (1.8)	-4.7 (5.8)	**12.2 (3.8)**
CSE, etc.	7.3 (2.8)	-3.2 (4.2)	.3 (3.6)	-4.4 (5.4)	2.5 (1.9)	1.8 (2.7)	1.4 (1.8)	-11.7 (6.4)	3.9 (3.8)

Standard errors are given in parenthesis and significant coefficients are given in bold.
These figures are extracted from the full models in Tables 6.2.2 and 8.2.2.

Figure 8.3: Fitted HG scores of first job by qualifications and industrial sector (women)

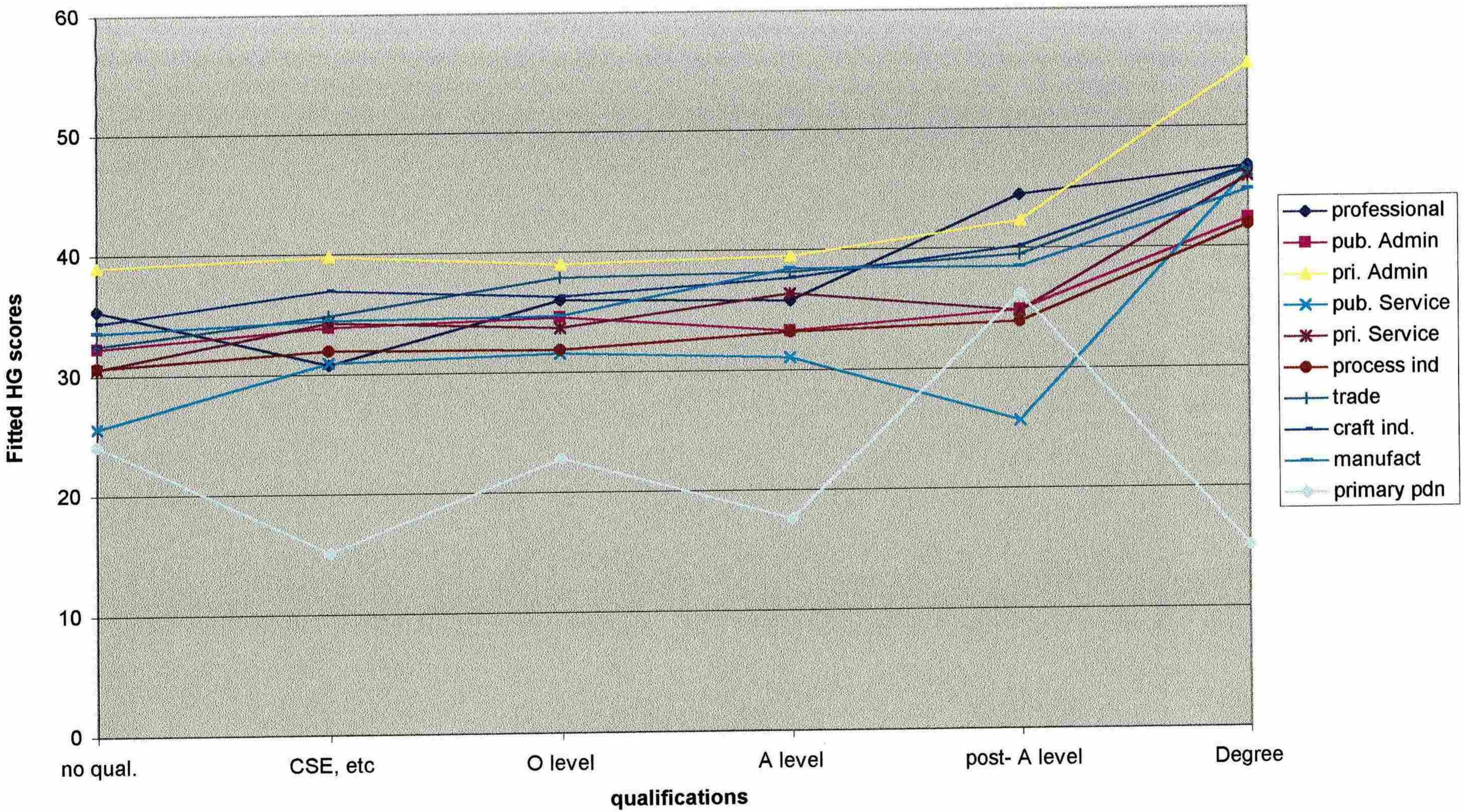


Figure 8.4: Fitted HG scores of 1991 jobs by qualifications and industrial sectors (women)

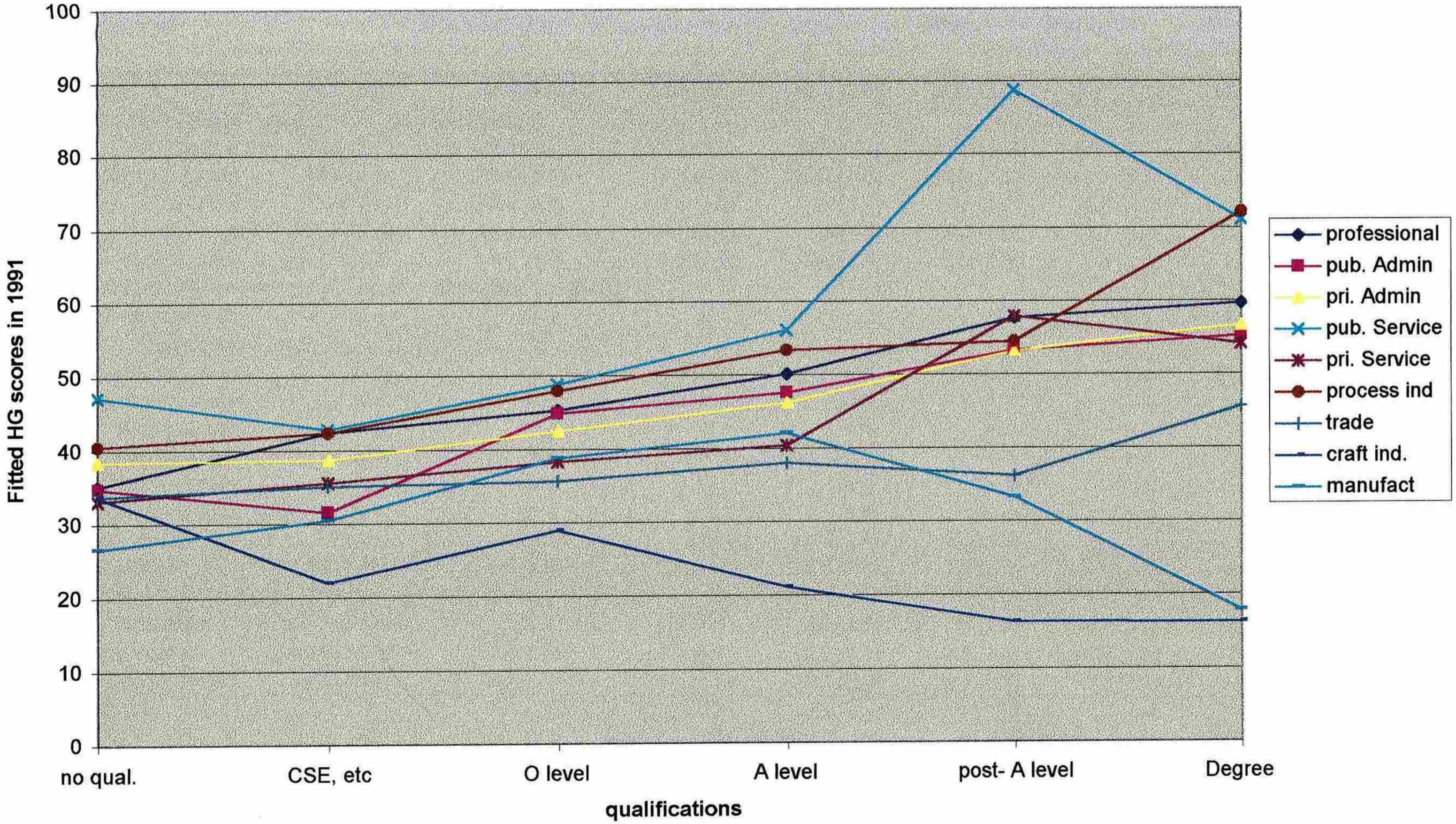


Table 8.2.2: Regression of 1991 job scores in nine industrial sectors – all female respondents

Industrial sectors of jobs in 1991	Professional	public administration	private administration	public services	private services	process industry	trade	craft industry	manufacturing
Constant	**35.2 (3.8)**	**34.9 (5.5)**	**38.5 (5.0)**	**47.3 (9.8)**	**33.2 (3.4)**	**40.7 (7.3)**	**33.8 (3.5)**	**33.8 (9.5)**	**26.7 (9.4)**
Qualifications (base category: no qualifications)									
degree	**24.6 (2.9)**	**20.4 (4.1)**	**18.2 (4.4)**	**23.9 (7.2)**	**21.0 (4.1)**	**31.5 (5.7)**	**11.9 (4.7)**	-17.5 (9.9)	-8.8 (15.8)
Post A Level	**22.6 (2.5)**	**18.4 (4.4)**	**14.8 (6.0)**	**41.6 (13.7)**	**14.8 (3.1)**	**13.9 (5.8)**	2.5 (4.0)	-17.4 (9.9)	6.7 (8.1)
A level	**15.0 (2.9)**	**12.8 (3.9)**	**7.8 (3.6)**	8.9 (5.9)	**7.3 (2.7)**	**12.8 (4.2)**	4.3 (3.0)	-12.6 (9.3)	**15.5 (6.3)**
O level	**10.2 (2.5)**	**10.1 (3.4)**	4.1 (3.2)	1.6 (4.9)	**5.2 (1.9)**	**7.3 (2.4)**	2.0 (1.8)	-4.7 (5.9)	**12.2 (3.8)**
CSE, etc.	7.3 (2.8)	-3.2 (4.2)	.3 (3.6)	-4.4 (5.4)	2.5 (1.9)	1.8 (2.7)	1.4 (1.9)	-11.7 (6.4)	3.9 (3.8)
Social origins (base category: semi or unskilled manual)									
Employers & managers	n. s.	n. s.	n. s.	-n. s.	n. s.	n. s.	**4.9 (2.1)**	n. s.	-n. s.
professionals	n. s.	n. s.	**7.0 (3.2)**	-n. s.	n. s.	n. s.	**17.3 (4.7)**	n. s.	-n. s.
semi-professionals	n. s.	n. s.	-n. s.	n. s.	n. s.	n. s.	n. s.	n. s.	n. s.
routine non-manual	-n. s.	n. s.	n. s.	-n. s.	n. s.	-n. s.	n. s.	n. s.	-n. s.
own account	n. s.	n. s.	n. s.	-n. s.	-n. s.	n. s.	n. s.	n. s.	-n. s.
manual foremen	-n. s.	-n. s.	n. s.	n. s.	-n. s.	n. s.	**7.2 (2.2)**	n. s.	n. s.
skilled manual	n. s.	-n. s.	n. s.	n. s.	-n. s.	-n. s.	n. s.	n. s.	n. s.
First job scores	.07 (.05)	.1 (.1)	.1 (.1)	.1 (.2)	.04 (.08)	-.1 (.2)	**.2 (.1)**	**.9 (.3)**	.2 (.2)
Qualifications since 1981	**4.76 (1.18)**	**4.8 (1.8)**	2.8 (1.9)	5.0 (3.0)	1.8 (1.7)	2.0 (3.2)	1.4 (1.8)	-4.5 (4.0)	5.5 (3.6)
Change of sector	-1.83 (1.37)	-.5 (2.2)	.2 (1.4)	-4.2 (3.5)	.3 (1.5)	**-4.3 (2.1)**	-1.1 (1.3)	-3.5 (6.6)	3.9 (2.7)
Part-time work	**-6.10 (1.13)**	**-5.6 (1.8)**	**-7.3 (1.5)**	**-8.9 (2.8)**	**-10.1 (1.4)**	**-4.5 (1.9)**	**-7.7 (1.2)**	**-20.0 (4.9)**	-5.0 (2.9)
Large firm in 1991	**4.02 (1.16)**	-.9 (2.0)	1.6 (1.5)	**-8.2 (2.8)**	**4.4 (1.3)**	-1.1 (2.1)	-.9 (1.2)	**-12.6 (4.9)**	.3 (3.3)
Adjusted R^2	.47	.32	.25	.38	.29	.41	.28	.34	.29
N	449	236	299	94	429	126	288	47	95

Standard errors are given in parenthesis and significant coefficients are given in bold. Sample: all female respondents in 1991, NCDS5 (Total N = 2063)

Overall, results presented in Tables 8.1.2 and 8.2.2 show that the direct effects of initial qualifications on promotion vary only a little between industrial sectors for men but slightly more for women. Primary production, as can be judged by the relatively flat slopes for men, is the least meritocratic sector since neither initial qualification nor qualification gained since 1981 is significant in promotion. For women, the slopes are steeper in the more bureaucratised sectors such as the professional and public administration, as well as in the public services and process industries. These sectors can therefore be said to be more meritocratic. In contrast, the trade, craft and manufacturing industries are much less meritocratic. Thus, it can be concluded that hypotheses one and two are only partially supported.[2]

From the above analysis, we can see how factors such as origins and qualifications operate in different ways for men and for women. However, in a disaggregated analysis of this kind, we cannot tell the effect of another ascribed characteristic – *gender* – on promotion. Hence a pooled analysis combining men and women is necessary. This will allow us to identify the gender gap in promotion in each individual sector. The gender effect on job promotion in different industrial sectors is summarised in Table 8.3. Variables including initial qualifications, social origins, first job attainment and further qualifications since 1981 are controlled but not reported.

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[2]Formal tests of significance were carried out. The effects of initial qualifications did not vary between sectors for men. For women, however, it was found that the returns to qualifications were significantly lower in the craft and manufacturing industries, where female respondents obtained 3 points lower job scores.

Table 8.3: Gender effect on Hope-Goldthorpe Score of 1991 job by sector

Industrial Sectors	Gender coefficient (standard error)	N
Professional	-1.1 (1.1)	739
Public administration	**-9.3 (1.1)**	594
Private administration	**-9.2 (1.0)**	787
Public services	-2.5 (1.5)	421
Private services	**-7.5 (1.2)**	811
Process	**-5.1 (1.2)**	488
Trade	**-6.3 (1.0)**	683
Craft	-.4 (1.6)	460
Manufacturing	**-3.3 (1.2)**	622
Primary production	**-9.2 (4.5)**	62

Significant coefficients are shown in bold.
Sample: all respondents, NCDS5 (Total N = 5667)

We can see from Table 8.3 that women suffered significantly from lower promotion in most sectors except in the professional, public service and craft industries. As it is widely known that there is a much higher proportion of female part-time workers in the service and trade (wholesale and retail) industries (see Tam, 1977 for more details), we would therefore expect the gender gap in these sectors to be larger because of part-time employment. However, the gender gap is largest in both public and private administration, and in primary production. One may expect agriculture to be the least universalistic sector, but this finding is certainly surprising for public and private administration. Despite the strong effects of formal qualifications in the more bureaucratised sectors, the disadvantage suffered by female respondents suggests that there is more than one dimension to judge the extent of meritocracy.

The gender effect in the above analysis is almost certainly blurred by women working part-time as these workers may be less likely to get promotion. To establish whether there is a 'true' gender gap between men and women in promotion, this analysis is repeated with full-time workers only.

Table 8.4: Gender effect on Hope-Goldthorpe Score of 1991 job by sectors (Full-time workers only)

Industrial Sectors	Gender coefficient (standard error)	N
Professional	**-2.8 (1.1)**	363
Public administration	**-7.0 (1.3)**	397
Private administration	**-6.0 (1.3)**	490
Public services	-.6 (2.1)	323
Private services	-1.0 (1.9)	267
Process	-2.6 (1.7)	345
Trade	-.7 (1.7)	324
Craft	1.2 (2.4)	306
Manufacturing	-.7 (1.6)	474
Primary production	2.7 (9.5)	35

Significant coefficients are shown in bold.
Sample: all respondents with full-time jobs in 1991, NCDS5 (Total N = 3324)

The results from Table 8.4 tell quite a different story after controlling for part-time work. Women working full-time in seven out of the ten sectors did not suffer from significantly lower occupational attainment. These results suggest that in sectors such as private services, process, trade, manufacturing and agriculture, women's lower promotion chances are explained by part-time work. However, the disadvantage suffered by women remains most pronounced in public and private administration. More surprisingly, considering men and women in the professional sector did not have significantly different job scores in Table 8.3, women working full-time are in fact penalised by having lower promotion chances in this sector. In other words, female part-time workers in the professional sectors were doing well in the sense that their promotion chances were not significantly different from those of male cohort members in the same sector.[3] Women's disadvantage in promotion chances in the professional, public and private administrative sectors – the apparently 'more meritocratic' sectors – appear to be related to factors which do not arise from part-

[3] In their study of highly qualified women, Dale and Egerton (1997) found that these women working part-time enjoyed relatively high hourly earning, especially those who worked in the public sector.

time employment. Hence, as far as gender equality in graduates' job attainment is concerned, the more bureaucratised sectors can be concluded to be more sexist and thus hypothesis four is not supported.[4]

Disaggregation by Firm Size

We have seen in Chapter Six that the practice of meritocratic recruitment varies by firm size. Large establishments are found to be more meritocratic where the returns to formal qualifications are higher than those in smaller firms. To what extent does this apply to promotion? To test hypothesis five formally, a disaggregated analysis is repeated to compare the net effects of qualifications on promotion between large and small firms.[5]

Table 8.5 Effect of qualification on promotion by firm size

	Large Firms	Small Firms
Constant	**30.7 (1.8)**	**28.6 (1.9)**
Qualifications (base category: no qualification)		
Degree	**17.7 (1.1)**	**19.6 (1.5)**
Post A level	**16.0 (.9)**	**16.8 (1.3)**
A level	**10.1 (.8)**	**10.0 (1.1)**
O level	**5.3 (.7)**	**6.5 (.9)**
CSE, etc.	1.4 (.8)	**3.4 (.9)**
Female	**-4.7 (.4)**	**-7.8 (.6)**
Qualification since 1981	**3.1 (.5)**	**2.9 (.7)**
First job scores	**.2 (.0)**	**.2 (.0)**
Adjusted R^2	.35	.32
N	4543	2535

Standard errors are given in parenthesis and significant coefficients are shown in bold.
Sample: All respondents in NCDS5, N=7078.

Results from Table 8.5 show that respondents at most qualification levels had slightly better promotion chances in small firms than their peers in large firms. However, these differences remain rather small and the slopes look remarkably

[4] However, we should also note that the above analysis only looked at current part-time/full-time status. Some of the differences may be explained by histories of employment.
[5] As in all previous analysis, a range of variables including social origins and industrial sectors are included in the models.

similar. The positive effects of qualifications gained since 1981 do not appear to vary significantly by firm size either. Moreover, first job scores do not appear to have varying effects on promotion chances in large and small firms. Thus the practice of meritocracy does not vary by firm size in promotion. For gender differences, this analysis shows very clearly that women were significantly worse off than men in their promotion chances in both large and small firms. But the disadvantage is somewhat greater in small organizations. A significant interaction effect is found between firm size, gender and job scores in 1991, suggesting that a job in a large establishment in 1991 proves to be beneficial to women but not to men.[6]

Sectoral difference in the graduate labour market

We have seen in the above analyses that formal qualifications (initial and new qualifications since 1981) have major effects on promotion, both directly and via first jobs. However, the slopes varied more for women than men between industrial sectors. It is also established that men have advantage over women in promotion, and the gender gap was widest in the more bureaucratised sectors. Moreover, the extent of meritocracy in promotion did not vary by firm size through the findings suggested that women were less disadvantaged in large firms than in small ones in getting promotion. This section will explore the sectoral differences in the promotion chances of the NCDS graduates in 1991, with particular emphasis on the effect of degree subject on graduates' promotion chances in different sectors.

The analysis in Chapter Six showed that the effect of degree subject on graduates' first job scores varied between industrial sectors, suggesting that the need for specialised knowledge and skill may differ by industrial sector. We therefore expect the effect of degree subject on promotion chances to vary between sectors.

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[6] The coefficient of this interaction term is 3.7, with a standard error of 0.9.

Multivariate analyses are repeated for the NCDS graduates to examine their Hope-Goldthorpe occupation scores in 1991 in separate sectors. To keep the models simple, subject of highest qualifications in 1991 and industrial sector of 1991-job are used in this analysis. Due to the small number of cases in each sector, the ten industrial sectors are collapsed into five categories[7], and both male and female graduates are modelled in a pooled analysis. The change of industrial sector and related occupation initially included in the analysis were found to be insignificant and were therefore removed from the final analysis. The results are presented in Table 8.6.

Table 8.6: Regression of 1991 job scores in five combined sectors - graduates

Industrial sectors of jobs in 1991	Professional	Public administration	Private administration	Services	Process, craft, manufacturing
Constant	**64.3 (3.6)**	**57.6 (4.5)**	**51.3 (6.6)**	**61.8 (8.3)**	**46.2 (6.8)**
Gender	**-2.5 (1.1)**	**-5.7 (2.6)**	-2.5 (2.5)	-2.4 (3.2)	**-6.7 (2.3)**
Social origins (base category: low)					
high	1.9 (1.3)	3.4 (2.5)	2.1 (3.2)	**9.7 (4.0)**	-.7 (2.6)
middle	**3.2 (1.6)**	-1.9 (3.8)	4.0 (3.9)	6.2 (4.7)	-.4 (3.9)
Subjects of highest qualifications in 1991 (base category: Social Science)					
Medicine, Law	**12.0 (3.2)**	11.3 (8.1)	**15.7 (5.6)**	1.0 (7.8)	---
Engineering, Technology	---	.7 (4.5)	9.7 (5.7)	5.3 (5.2)	**17.2 (6.0)**
Science	-.8 (2.6)	-4.8 (4.3)	8.9 (5.5)	7.3 (6.1)	**17.6 (5.8)**
Accounting, Administration	-.8 (3.5)	-3.1 (4.5)	4.3 (5.3)	**13.5 (4.2)**	**18.3 (6.0)**
Humanities	.3 (3.0)	1.5 (5.1)	.7 (7.5)	-8.0 (7.0)	**18.3 (7.7)**
Creative Arts	-2.4 (3.4)	---	1.7 (8.1)	-8.4 (6.0)	2.7 (6.9)
Education	-3.4 (2.4)	-4.5 (3.8)	-11.7 (8.3)	**-15.3 (6.6)**	-6.6 (9.6)
Vocational	-.4 (2.5)	-3.1 (3.8)	3.8 (5.7)	**13.3 (4.5)**	11.0 (6.1)
First job scores	-.0 (.0)	**.2 (.1)**	**.2 (.1)**	-.2 (.1)	.1 (.1)
Qualifications since 1981	**2.3 (1.0)**	-.4 (2.4)	1.8 (2.6)	**-6.5 (3.1)**	1.0 (2.4)
Large firm in 1991	-.1 (1.3)	-2.8 (3.3)	.6 (2.7)	**7.7 (3.0)**	5.1 (4.0)
Adjusted R^2	.29	.10	.19	.26	.39
Explained sums of squares	2464	2299	5432	5094	3056
Degrees of freedom	12	12	13	13	12
N	146	90	111	75	63

Standard errors are given in parenthesis and significant coefficients are given in bold.
Sample: Graduates only, NCDS5 (Total N = 485).

[7] Whilst professional, public and private administration remain unchanged, public and private services are recoded into 'services'; process, craft and manufacturing industries are combined into a single category; and primary production is removed due to extremely small numbers.

The effect of degree subject on graduates' 1991-job attainment does show some variation between sectors. Graduates with degrees in 'elite' subjects such as Medicine, Law, Pharmacy and Dentistry enjoyed distinct advantages in the professional and private administrative sectors. Those in Accounting and Administration are found to have a 13-point advantage in their job scores in the services sector compared with graduates in Social Science. In addition to the 18-point benefit accountants and administrators got in the process, craft and manufacturing industries, graduates in Engineering, Technology and Science also did well, having a 17-point advantage in these sectors.

Not surprisingly, graduates with vocational degrees such as Catering and Hotel management, or Wholesale and Retailing enjoyed major advantages in their occupational scores in the services industry, and to a lesser extent in process, craft and manufacturing industries. The results may imply that different specialist skills are needed for different industrial sectors, thus explaining the varying promotion chances for graduates with different subjects in each particular sector. Therefore the hypothesis (hypothesis 6) that the effect of degree subject on promotion varies between sectors is largely supported.

With respect to gender inequalities in promotion chances, female graduates were no better off than less qualified women. As can be seen from Table 8.6, the gender coefficients in all sectors are negative, indicating a female disadvantage in promotion chances. Whilst this difference is not significant in private administration and the services sector, the magnitude of this effect in public administration, process, craft and manufacturing remains large and significant. Again, as the findings suggested in the last section, the lower promotion chances of female graduates may be

a result of part-time work. To test whether this is the case for female graduates, the analysis is repeated by excluding part-time workers from the models.

Table 8.7: Gender effect on Hope-Goldthorpe Score of 1991 job by sector (Graduates Full-time workers only)

Industrial Sectors	Gender coefficient (standard error)	N
Professional	**-3.1 (1.4)**	100
Public administration	**-7.3 (3.0)**	61
Private administration	.1 (2.9)	80
Services	1.7 (3.2)	54
Process/ manufacturing	-.6 (1.7)	53

Significant coefficients are shown in bold.
Sample: Graduates with Full-time jobs in 1991, NCDS5 (Total N = 348)

Even when only graduates working full-time are included in the analysis, the results from Table 8.7 show that female graduates in the professional and public administrative sectors still suffer from significantly less promotion.[8] The gender gaps in promotion chances are actually wider in Table 8.6 than the gaps shown in Table 8.5 for the same sectors.[9] However, female graduates working full-time are no longer significantly different from their male counterparts in process and manufacturing sectors. Once again, we can see that this ascriptive characteristic - gender operates to different extents between industrial sectors. Thus the evidence from the above analysis disproves hypothesis four that full-time work has a stronger effect on promotion in the less bureaucratised sectors.

[8] Separate models were run to test the effect of part-time work of female graduates on their occupational attainment in 1991. Results show no significant difference between full-time or part-time work on their job scores in all sectors.

[9] A previous study showed that part-time work is actually advantageous in terms of hourly earning for women who have a higher qualification, particularly if they work in the public sector (Dale and Egerton, 1995: 117). Although earnings are not strictly comparable to occupation scores, this may cast some light on the apparently large reduction of job scores of graduate women working full-time in the professional and public administrative sectors.

Summary and Conclusion

In the beginning of this chapter, I set out to test the following hypotheses: first, initial qualifications have stronger influence on promotion in the more bureaucratised sectors than sectors which are less bureaucratised. Second, first job scores also have bigger and positive effects in these sectors. Third, new qualifications gained since 1981 will also have stronger and positive effects on promotion in the more bureaucratised sectors. Fourth, part-time work has a bigger effect on promotion in the less bureaucratised sectors. Fifth, large firms are more meritocratic than small ones in their promotion practices. And finally, degree subject affects graduates' promotion to a different extent between industrial sectors.

The findings of the multivariate analyses suggest that, for male respondents, the major difference in the effects of formal qualifications on recruitment between industrial sectors has disappeared in promotion (although agriculture remains the least meritocratic sector). By comparison, a more diverse picture is found for women where variations in the effects of formal qualifications on promotion can still be found between industrial sectors. Formal qualifications, however, do not have a significant effect on promotion chances in the craft and manufacturing industries for women. These sectors can be said to be the least meritocratic. Thus hypothesis one is not supported since formal qualifications did not in general have stronger effects on promotion chances in the more bureaucratised sectors.

Although the effect of first job attainment shows slight variation between sectors, no pattern is found and its effect is certainly not stronger in the more bureaucratised sectors. Thus hypothesis two is also rejected. However, hypothesis three that new qualifications obtained since 1981 have stronger effects in the more

bureaucratised sectors is partially supported since it applies to women and to the men in the professional sector.

Similar research in Sweden has found bigger variation between sectors, however. Erikson and Jonsson (1996) reported that for both men and women, the public sector is most meritocratic, and the level of occupational prestige is also heavily dependent on formal qualifications in the process industry for women. At the other end, a weak association between the private sector and formal qualifications is found and the same is true in primary production (Erikson and Jonnson, 1996). These results are of course not strictly comparable to the British findings. Apart from differences in institutional characteristics, such as the educational system, and the public and private share of the economy, their sample may also be different to that of the NCDS. In Erikson and Jonsson's study, the sample contains men and women between the age of 25 and 35 who had a job in 1990. The varying degree of meritocracy between sectors may be larger at the earlier stages of respondents' working lives. Similar results were found in Chapter Six in the first job of the NCDS cohort where there was a greater variation of meritocracy between sectors. For respondents over the age of 30, the accumulation of work experience, on-the-job training and other personal resources may form other important criteria which determine their promotion chances, and these may be important in all sectors alike. Although initial formal qualification may still remain important (as shown in the analyses in this chapter), it may only serve as a basic screening device for promotion, thus explaining the smaller variation between sectors.

The findings of this chapter also suggest that the effects of qualifications (both initial qualifications and those gained after 1981) on promotion chances do not vary significantly according to firm size. Thus hypothesis five is not supported.

Another major finding is that the effect of part-time work on promotion chances is to some extent associated with the level of bureaucratisation. As has been pointed out elsewhere, 'the disadvantage associated with part-time work could be reflected in long term negative effects on the worker's earnings and occupational mobility' (Tam, 1997). Part-time work has a significant negative effect on promotion and this disadvantage is most severe in the private service sector. It is likely that those employed in the private service sectors (personal and domestic services) are mostly part-time semi-skilled or unskilled workers which makes it even more difficult for them to get promoted.[10] A past study has also suggested that previous part-time work and non-working experience had a significant channelling effect on the current labour market position. Part-time work carries with it cumulative disadvantages, which have a depressing effect on employment prospects (Tam, 1997). It is highly probable that the female members of the NCDS cohort had stopped working for a while (because of childbearing) and rejoined the labour market as part-time workers. However, this question has to be answered by more detailed work history analysis, which is beyond the scope of this thesis.[11]

Although the disadvantage women suffered in having less promotion in the less bureaucratised sectors (such as services, trade and manufacturing) is associated with part-time employment, the biggest gender gap is found in the more bureaucratised sectors. Evidence found in this chapter shows that female full-time workers, including graduates, were also worse off than men in promotion chances in the professional and in public administrative sectors, and for all females in both

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[10] Research has found a high concentration of part-time workers, largely women, in retail and personal service sector, and most of these part-time jobs are characterised by low-skilled content such as office cleaning, lunch-hour and weekend sale assistants (Tam, 1997).

[11] Although the NCDS has full work history data of the respondents, it is not possible to address all issues in this thesis.

administrative sectors. This disadvantage cannot be explained by qualifications or part-time work. This gender gap, as a previous study on weekly earnings of men and women found, is likely to be associated with gender discriminations (Dale and Egerton, 1997:131). Thus hypothesis four is only partially supported. However, part-time work does not explain gender inequality in the more bureaucratised sectors where the gap is most pronounced. The fact that gender – being an ascriptive characteristic – still has a significant role to play in the attainment process leads us to conclude that the extent of meritocracy cannot be judged solely on one criterion (i.e. the effect of formal qualification on recruitment and on promotion).

We can see from the disaggregated analyses in Chapter Six and in this chapter that formal qualification is an important criterion (if not the most important one) for employers in large bureaucracies in the professional and administrative sectors both in recruitment and promotion. It is likely that in these organisations recruitment and promotion procedures are highly institutionalised (such as the use of formal application forms, health checks, etc). Formal qualification becomes a convenient screening device in the selection process. However, although most large organisations, especially those in the public sector, claim to have an equal opportunity policy, empirical evidence suggests that women are still disadvantaged in both recruitment and promotion. Perhaps it is more difficult for employers (or those in the selection committee) to justify why they appoint somebody who is under-qualified to fill certain positions, but it may not be so difficult for them to rationalise why they appoint a man instead of a woman. The NCDS data suggest that the professional and administrative sectors may seem highly meritocratic in their emphasis on formal qualifications in their selection processes, but the evidence on gender inequality has cast doubts on this.

Chapter Nine

Summary and Conclusion

At the beginning of this thesis I asked the following questions: is there equal access to different subject groups in higher education? How far does subject choice in higher education influence occupational attainment? Does the degree of meritocracy vary between industrial sectors and between organisations of different sizes?

As noted in the introduction, past research has argued that Britain has yet to become a truly meritocratic society as direct influences of social class and gender on occupational attainment are still persistent, even when the meritocratic factor - education - is taken into account. However, most research to date has primarily focused on the *level* of qualification obtained and its effects on class destinations or occupational attainment. The unequal access to different subjects in higher education and the different effects of formal qualification on job attainment in different industrial sectors have not been thoroughly explored. Moreover, research on inequalities in education has also largely dismissed the influence of cultural background on individuals' educational achievements.

By adopting Bourdieu's theory of cultural capital and social specialization, this thesis revealed that the role of cultural capital in higher educational success cannot be dismissed. It was suggested that the influence of cultural capital would disappear at the later stages (or transitional points) of the educational career (Boudon, 1974; Halsey, Heath and Ridge, 1980; Goldthorpe, 1992). Contrary to this prediction, the findings based on the NCDS cohort's experience indicated that cultural capital remains an important factor, even after social origins, parents' educational level, and the child's ability have been taken into account. Important differences also exist between different sections of the privileged classes. Children from managerial and

entrepreneurial backgrounds were much less successful than children from professional homes in obtaining degree education. However, Bourdieu's claim that there is a close relationship between cultural capital and subject specialisation was not substantiated.

Stronger support for Bourdieu's theory of the 'social specialization of faculties' was found. For working class students, the choice of subject in higher education was limited by their social origins. There was limited access to different subjects and faculties such as Medicine and Law. Students, normally from the privileged classes, with top public examination results and those who had attended private schools had better chances of gaining access to these faculties. Working class students, in Bourdieu's words, have to 'pay for' their higher education by having more restricted choices in subject area.

Another factor which explains unequal access to different subject areas in higher education is the strong link between private schools and the 'elite' faculties such as Medicine and Law. It has been widely documented that private secondary education is a relatively exclusive privilege enjoyed by children from wealthy backgrounds (Halsey, Heath and Ridge, 1980; Walford, 1984). It is likely that the introduction of competitive public examinations has 'forced' the public schools to join the 'credential society' (see also Heath and Cheung, 1997). By securing a superior secondary education, children from privileged backgrounds are more likely to perform well in public examinations, to gain access to university and simultaneously gain access to 'elite' faculties. Grammar school pupils with similar public examination performance did not enjoy this privilege, indicating that entry to these 'elite' subjects was not solely a matter of ability, but that it was also biased by class. The educational success (and later occupational success) of the privileged few

who went to public schools is aided by wider choices in university education. In Bourdieu's words, the chance of working class students studying 'elite' subjects was much restricted. Working class students were more likely to study Education and miscellaneous vocational subjects. Again, this finding appeared to support Bourdieu's theory that although some working class students made their way through to university, they were still penalised by being 'channelled' into certain subjects. It can therefore be concluded that social origin affects the next generation indirectly through the type of school, and the subjects that children choose in university education.

Gender segregation in subject specialisation in the 1970's, when the NCSD cohort attended university, also explained men and women's unequal access to different disciplines in higher education. With the ever-increasing participation rate of women in higher education, this may be subject to change in the 1990's. But for the NCDS cohort, women were still highly concentrated in Humanities and Education whereas men were more likely to specialise in Engineering and Technology. The gender segregation in subject choice has far reaching implication for the occupational attainment of the NCDS graduates.

In short, the answer to the first question is a simple 'no'. The opportunity of entering different subject areas in higher education is not equally distributed between students from more or less advantaged backgrounds, even when examination results are taken into account.

We can now turn to the second question whether subject choice in higher education influences occupational attainment. If different degree subjects lead to more or less the same level of occupational attainment, then inequalities in access to different subject areas need not generate further inequalities. However, evidence described in this thesis shows that subject choice is crucial to occupational attainment.

Different degree subjects lead to substantially different labour market outcomes. On average, graduates with more job-specific degrees had an advantage over their peers with non job-specific degrees both in avoiding unemployment and in getting high-level jobs. However, even among graduates with job-specific degrees, their good fortune only lasted as long as they had jobs which were related to their studies. This means that graduates enjoyed significant occupational advantages only if they found jobs that were related to their degree subjects. Vocational relevance proves to be more important in first jobs and this importance is seen to decrease in respondents' job attainment in 1991, which confirms the findings of previous research (Witte and Kalleberg, 1995).

Just as there is a hierarchy among schools, so there is a hierarchy of institutions in higher education. University graduates were less likely to be unemployed than their peers from polytechnics and further education colleges. Similarly, graduates from more privileged backgrounds were also less likely to be unemployed than graduates from more humble origins. This suggests that there is a two-tier system in both secondary and higher education where pupils from privileged backgrounds continue to enjoy the advantage of going to better universities after receiving private secondary education.

Factors responsible for the different levels of first job attainment of all NCDS members were also examined. The results suggested not only (as is well known) that the level of qualifications is important in first job attainment, but also that the area of specialisation of knowledge and skills, firm size and the industrial sector of first jobs all have important roles to play. For the NCDS graduates, both subject choice and industrial sector are important predictors of their first job attainment.

Although the direct influence of social class on first job attainment still persisted, formal qualifications remained the most powerful predictor of first job scores. It is clear, however, that the slope is much steeper at the higher end of the qualification ladder.

Structural factors in the labour market such as industrial sector and the size of establishment proved to be important determinants of first job attainment. These results are consistent with Kerckhoff's (1993) findings on the importance of structural factors in occupational attainment. Respondents in the professional, public and private administrative sectors and in large firms achieved higher first job attainment than equally qualified people in other sectors. It is quite possible that the more capital intensive, large bureaucracies are able to offer higher rewards to individuals.

The role of cultural capital remained important for women in their first job attainment where its direct effect could still be found on first job scores, but for men this effect was mediated by formal qualifications. Overall, there were still signs of cultural reproduction taking place in the later stages of the attainment process of the NCDS cohort.

The female NCDS cohort members were found to have lower first job attainment than male respondents. However, as was established in Chapter Four, gender had only an indirect effect on graduates' first job attainment, which was mediated by subject choice. In other words, gender made no difference in graduates' first job attainment once degree subject was taken into consideration. Thus subject choice helps explain the differential occupational attainment of male and female graduates.

Respondents' occupational attainment in 1991 was then examined in Chapter Seven, in which educational and sectoral changes since respondents' first jobs were

discussed, with a focus on promotion. It was found that there was a great deal of movement between occupations and industrial sectors since first jobs. Some respondents obtained further qualifications since 1981, which proved to a large extent to be beneficial to their job attainment in 1991. There was little evidence, however, that the change of subject was beneficial to graduates' promotion. The change of sector, on the other hand, has the expected negative effect on promotion due to possible loss of tenure and the need for re-training.

Degree subject remained a decisive factor in determining the NCDS graduates' job attainment in 1991. Job-specific degrees continued to bring occupational advantage to graduates in their jobs in 1991. However, the importance of entering a related occupation drastically decreased since respondents' first jobs. This confirms past research that the influence of vocational relevance is most important at the beginning of one's career.

Chapters Six and Eight attempt to answer the final question I posed in the introduction, namely whether the degree of meritocracy varies between industrial sectors and organisations of different sizes with respect to respondents' first jobs and their jobs in 1991. Evidence was found that structural factors in the labour market such as firm size and industrial sector are both associated with unequal returns to education in respondents' first jobs. The influence of formal qualification on occupational attainment was found to vary between industrial sectors. The returns to education were the lowest in the least bureaucratised sectors such as the agricultural and private service sectors. By contrast, the more bureaucratised sectors such as public and private administrative sectors were more meritocratic in the sense that education had the strongest effect on respondents' first job scores. However, women were more likely to suffer lower occupational attainment in these sectors. Thus the

most meritocratic sectors were paradoxically the most 'sexist' sectors. The influence of education also varied according to the size of establishment where large firms were found to be more meritocratic than small ones. Moreover, although female respondents had significantly lower attainment than their male peers in both large and small organisations, this disadvantage is significantly smaller in large organisations.

The analysis of graduates' job scores showed that subject choice had a different effect on first job attainment in different industrial sectors. Broadly speaking, not all graduates with job-specific degrees were better off than their peers with other degrees. Graduates with degrees in Medicine and Law were most advantaged as compared to their peers in other subjects in the professional, private administrative and the service sectors. This implies that employers in different industrial sectors may require different specialist skills and knowledge. Indeed, if we regard these specialist skills and knowledge as 'merit', the empirical results of this study may imply that 'merit' may be defined and interpreted very differently in different industrial sectors.

However, turning to respondents' jobs in 1991, the extent of meritocracy with respect to promotion chances did not vary much between industrial sectors. That is, the effect of formal qualifications on promotion chances was fairly similar between industrial sectors. This may be due to the fact that promotion relies not only on educational qualifications, but also experience, seniority and other personal attributes that are often difficult to measure.

Overall, subject choices made in higher education proved to have great influence on occupational success, especially on first job attainment. Therefore, the study of the 'level' of attainment does not completely capture the nature of educational inequalities.

Above all, evidence that there is unequal access to different degree subjects and that different degrees lead to different occupational outcomes suggests that disaggregating the analysis of educational attainment into subject areas is a useful tool for understanding the mechanisms contributing to inequalities in educational and subsequent occupational attainment.

Regarding occupational attainment, meritocracy should not be understood as a uniform process operating equally in different sectors and organisations of different sizes in the labour market. As regards sectoral differences, although the empirical results suggest that more bureaucratised sectors are generally more meritocratic in the sense that education yields the highest returns in first job attainment, there is little difference between sectors in respondents' later jobs. There may be two reasons for this. Either disaggregation by industrial sector is only useful for first job attainment but not in later jobs, or there are other 'relevant competencies' or 'meritocratic' factors in addition to educational attainment operating in different industrial sectors. This suggests that the need for disaggregating sectors (at least for later job attainment) may not be so compelling after all. Or that other 'meritocratic' factors should be taken into account.

Perhaps these 'other' meritocratic factors need to be explored further. As Marshall and Swift (1997) argued, people's class background may influence their possession of attributes that do not manifest themselves in educational achievements, but that quite properly (meritocratically) influence their occupational outcomes. Also, as Goldthorpe has forcefully argued, educational level served as no more than a 'screening device' in recruitment. Instead, 'in-house' or 'on-the-job' training and other attributes that may also be regarded as merit such as discipline, responsibility, steadiness, loyalty and commitment were more important in promotion.

Perhaps the modified path diagram in Chapter One needs further modification by removing sector and firm size in 1991 but to include the factors such as gender, and part-time work in 1991. Indeed there is a need for separate diagrams for the more and less bureaucratised sectors in the labour market because of the interaction effects shown in Chapters Six and Eight.

Figure 9.1 shows that in the more bureaucratised sectors, gender has both direct and indirect effects on respondents' jobs in 1991, despite the effect of initial and new qualifications gained after 1981. Indeed, there may be other factors affecting respondents' promotion, which are labelled as unmeasured effects in this study. This points to the need for further investigation.

Figure 9.1: Modified Path Diagram of Occupational Attainment in the more bureaucratised sectors

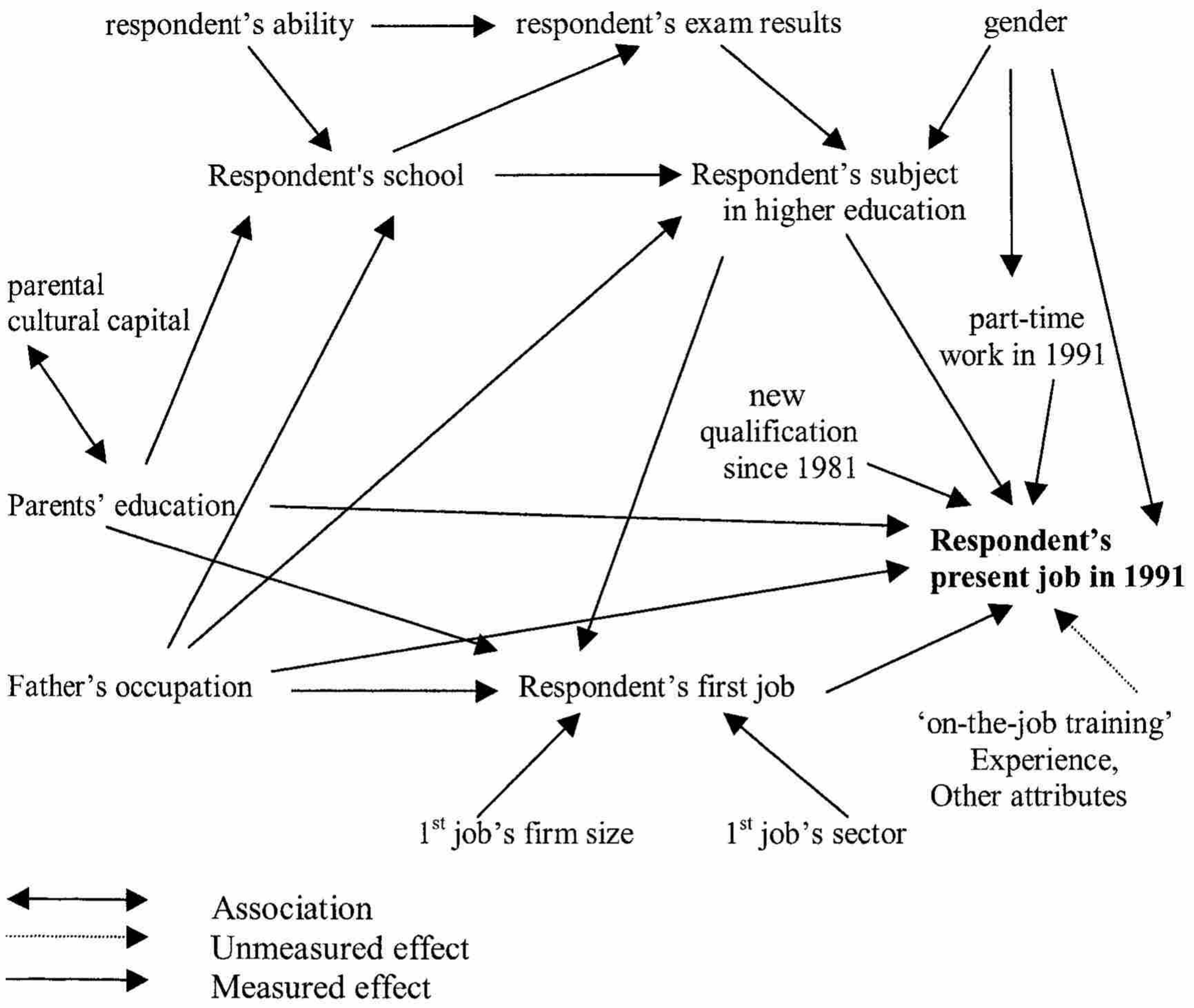
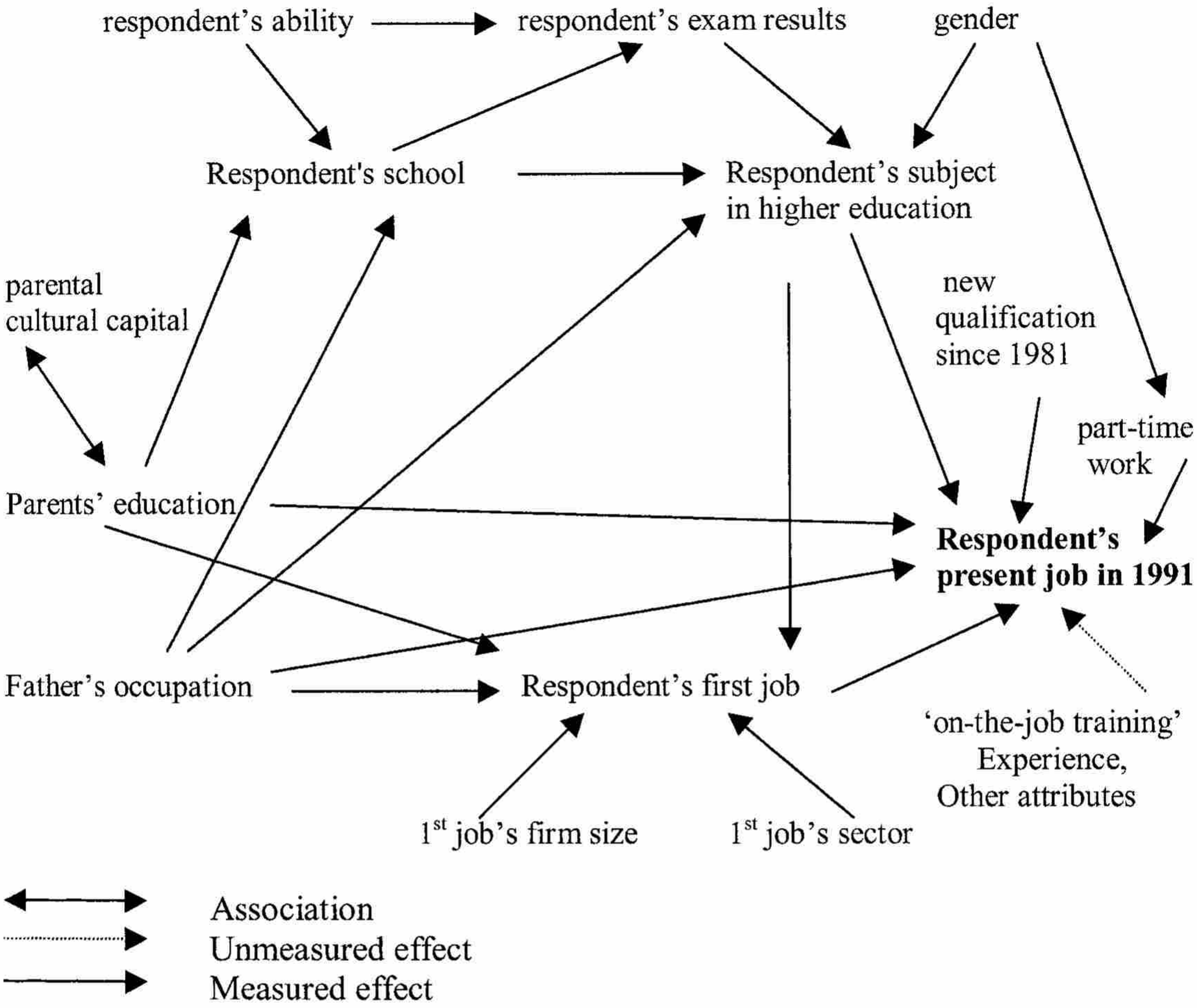


Figure 9.2 shows that in the less bureaucratised sectors, gender only has an indirect effect on respondents' job attainment in 1991. This demonstrates the fact that although the effects of formal qualifications no longer vary between sectors in promotion, that of gender does.

Figure 9.2: Modified Path Diagram of Occupational Attainment in less bureaucratised sectors



Indeed, education cannot directly and adequately represent 'merit'. Formal qualification may only serve as a screening device to 'find the best person for the job', at the point of recruitment. The diminishing importance of vocational relevance in respondents' later jobs also suggests that highly specialised academic knowledge may no longer be the most important criterion for promotion for graduates. Employers may be looking for other attributes such as social skills, the ability to work as a team member, initiatives and punctuality which can also be regarded, in one way or another, as aspects of 'merit'. This points to the need for a further study to explore the effects of these unmeasured (but possibly meritocratic) factors.

Throughout this thesis not only was educational attainment used as a proxy measure of 'merit', but general ability scores and exam results were also taken into account in the analysis of educational and occupational attainment. However, as I quoted in the introduction to this thesis, meritocracy may actually serve as a regulative ideal which may deter the excessive use of various forms of social exclusions, hence the need for 'objective' measures remains compelling.

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