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Occupation and
Later Occupational
Attainment: Cross-cohort
Changes among Men
and Women in Britain

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Changes among Men and Women in
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Abstract

This paper examines cohort and gender differences in occupational attainment in Britain. Using data from the three British Birth Cohort studies, I investigate the process of occupational attainment up to age 34 using a scale based on occupational earnings. Although qualifications appear to have stronger effects on occupational attainment for women than for men at both labour market entry and in the mid-thirties, I find no consistent evidence that the importance of qualifications is becoming greater across cohorts, either for men or for women. Also, there are no indications that the effects of occupation at labour market entry on men's and women's later occupational attainment have been strengthening over time. However, the findings do point to the possibility of cohort-specific effects: the experience of men and women in the 1958 cohort consistently differs from that of those in both the 1946 and 1970 cohorts.

1. Introduction and Background

In this paper I am concerned with the role of educational qualifications and of first occupation at labour market entry on individuals' occupational attainment during later working life. I investigate this problem on the basis of data from three British birth cohort studies relating to people born in 1946, 1958 and 1970.

The first research question asks: *are there cohort changes in the importance of education and first occupation in individuals' later occupational attainment?*

There are a number of studies which claim that a secular tendency exists, as a feature of 'modernisation', for education to become the dominant factor in individuals' occupational attainment (e.g. Treiman and Yip, 1979; Hendrickx and Ganzeboom, 1998). It is within the educational system that individuals primarily acquire their human capital; and it is their human capital that primarily determines not only the occupational level at which they enter the labour market but, further, their chances of subsequent occupational mobility. In other words, later occupational mobility reflects prior educational attainment rather than - as might be more typical in earlier periods - the accumulation of human capital in work itself, and in such a way that might compensate for a lack of formal educational attainment. Thus, following these arguments, it might be expected that *both* educational qualifications and occupational level on entry into the labour market would show increasing importance in the process of occupational attainment of more recent cohorts.

However, there is growing evidence for questioning whether the role of education in occupational attainment is of steadily increasing importance. It would appear that in many advanced societies over recent decades the association between individuals' educational qualifications and their social class destinations, as defined by occupation and employment relations, has tended to weaken (Breen and Luijkx, 2004). Moreover, recent studies of work-life occupational mobility point to a growing unpredictability in the transition from education to employment (e.g. Blossfeld *et al.* eds., 2005, 2008), with the range of occupations and forms of employment contract initially taken up by individuals with higher-level qualifications becoming far more heterogeneous for more recent cohorts. And it is not clear that 'over-qualification' occurring on entry into employment is then corrected through upward occupational mobility in later working life (e.g. Büchel and Mertens, 2004). In other words, it is conceivable that the relative importance of educational qualifications in the process of occupational attainment is weakening, or at least not increasing, across cohorts, and that work-life mobility continues to exert an independent effect on where individuals end up within occupational hierarchies.

A further possibility that has then to be considered is that rather than the importance of educational qualifications and first occupation steadily increasing, they will reflect particular economic or socio-political conjunctures and thus display 'cohort-specific' effects (Ryder, 1967). For example, a substantial literature has by now developed concerning the adverse effects on individuals' work histories of entering the labour market at a time of depressed economic conditions. Economists have demonstrated the 'scarring' effects of initial unemployment on individuals' future employment and earnings prospects (see Arulampalam *et al.*, 2001; Gregg, 2001). There is also a

growing interest in the more general effects of labour market entry under adverse conditions on individuals' subsequent occupational trajectories. For example, earnings in initial occupations may spread over a wider range in times of recession when individuals' comparative advantage becomes less relevant to occupational choice (Devereux, 2002; Moscarini and Vella, 2008).

The second research question asks: *are there gender differences in the importance of education and first occupation in the process of occupational attainment, and if so, are there cohort changes in these gender differences?*

There is evidence that while men's occupational trajectories are heavily influenced by their ability, women's trajectories are conditioned more by the level of education (Dolton *et al.*, 2005). It is possible that the acquisition of human capital in the course of employment itself is greater for men than for women. Further, women have more career interruptions, which may indicate that job training contribute to their human capital to a less extent than to men's, and employers tend to rely more on women's educational qualifications when assessing their potential. It is also possible that men's occupational progression is fostered more than women's by factors such as personal connections, social networks and also by the transmission of family capital in one form or another (Erikson and Goldthorpe, 1992). From this point of view, then, we might expect educational qualifications to play, overall, a smaller role in men's than women's occupational attainment, and we may not expect this gendered pattern to change much over time.

However, if there is a general tendency for educational qualifications to become more important in occupational attainment, this may result in a weakening of gender differences. In other words, men's processes of occupational attainment may become more like women's. At the same time, though, the question may be raised of whether, if cohort specific effects in processes of occupational attainment occur, these will show up differently for men and women. The position of women in the labour market has shown some improvement in the recent past (Nickell, 2001; Nickell *at al.*, 2002). However, since the early 1980s a growing proportion of men are known to have been experiencing high turbulence in their early labour market histories and increasing risks of downward occupational mobility (Golsch, 2006).

The structure of the paper is the following. After introducing the data and presenting some general descriptive results, I consider cross-cohort changes in the importance of men's and women's educational qualifications in determining their occupational level at labour market entry. Next I investigate cohort and gender differences in their subsequent occupational trajectories. Finally, I examine the relative importance of education, occupational level at labour market entry and occupational mobility in determining men's and women's occupational attainment in their mid-thirties.

2. Data and Measurements

For my present purposes, I use the data-sets from three British birth cohort studies: the Medical Research Council National Survey of Health and Development (NSHD), the National Child Development Study (NCDS) and the British Cohort Study (BCS70). These studies aim to follow through their life-course all children born in Britain in one week in 1946, 1958 and 1970, respectively. The NSHD has undertaken 18 data collections ('sweeps') up to age 53, the NCDS 7 up to age 46, and the BCS 6 up to age 34. In the two latter cases the original cohort comprised around 17 000 children; in the 1946 cohort the original sample size is significantly smaller, at around 5000 children.

The data-sets include recalled information on each job respondents had held¹: the timing of job changes recorded in months, the occupation in each job² and whether cohort members were employed full-time or part-time. In the subsequent analyses I consider only 'significant' jobs: i.e. those that lasted at least 3 months and were taken up between the age when cohort members first left full-time education and age 34 – i.e. the latest age for which there is information for respondents in all three cohorts. The data-sets also include detailed information on respondents' educational histories. I treat educational attainment as time-variant. That is to say, if cohort members attained a higher level of educational qualification at any point after their labour market entry, this is taken into account from that point onwards.

As with all longitudinal studies, the problem of missing data arises. All three studies have suffered from a considerable attrition of respondents from one sweep to another, and for each sweep there is also some amount of item non-response. However, various analyses of attrition and non-response have been undertaken and, so far, results are encouraging in suggesting that no major biases are being created (Nathan, 1999; Hawkes and Plewis, 2006; Wadsworth *et al.*, 2006).

In proceeding from occupational data to analyse occupational mobility of a 'vertical' kind, I follow a strategy in regard to the construction of occupational scales that is set out at length elsewhere (Bukodi, Dex and Goldthorpe, 2009). For present purposes, the important point is that, rather than using an occupational scale of a 'synthetic' kind, such as a scale of the 'socioeconomic' status of occupations or of their 'general desirability', I work with an analytical scale that is based on one well-defined feature of the occupational hierarchy, namely, earnings. I use an occupational earnings scale which is in effect an update of that produced by Nickell (1982), and is based on

¹ Members of the 1946 cohort have never been asked to recall the dates of every job they have held. Instead, through ten surveys conducted at ages 16, 17, 19, 20, 25, 26, 31, 36, 43 and 53, they have been asked to recall up to four job changes, with dates and occupational details between that survey and the previous one. This information was used to construct their occupational histories (for more details see Bukodi and Neuburger, 2009).

² Across the survey sweeps used in this paper, occupations were coded to changing official classifications (the SOC codes). Thus, it was necessary to re-code occupations throughout and the only viable coding frame for this purpose is SOC90.

average hourly earnings rates for all full-time employees taken from the New Earnings Survey 2002. This scale provides a score in the range of 1-100 for each of the 77 minor occupational groups distinguished in SOC90 classification (further details are available from the author on request). Since the scale is intended to be 'gender-neutral', I used the combined occupational wage rates of both men and women as the basis of the ranking. However, this procedure might be thought problematic because women and men are distributed unevenly across occupations, and also may have different pay within occupations. In order to check whether or not the gender-neutrality assumption is met, I produced occupational earnings scores for men and women separately and then compared these in a scatter plot. The results, not shown here, reveal that there is a remarkably high correlation (0.918) between women's and men's scores. Moreover, there are only a few occupational groups for which scores differ markedly by gender. Child-care assistants, store clerks and administrative officers have somewhat lower scores on the men's scale than on the women's scale, while the reverse is the case for assembly line-workers, paper, plastic and related process operatives and metal working process operatives. In sum, these results indicate that the occupational earnings scale can be regarded as essentially gender-neutral and thus as providing a good basis for cross-gender comparisons.

3. Results

3.1 Occupational Trajectories

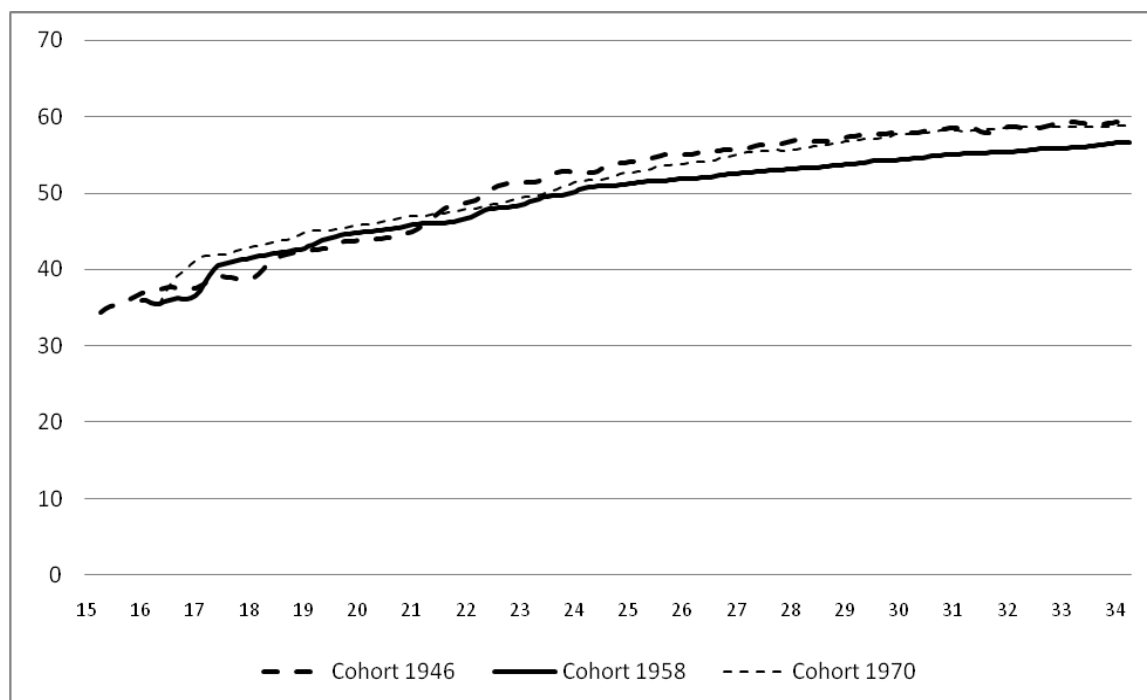
In Figures 1.1 and 1.2, I plot the average occupational earnings levels attained by men and women in the three birth cohorts by age.

So far as men are concerned, the general shape of the curves for the three cohorts is quite similar (Figure 1.1). Men have tended to move upwards occupationally in the course of their working lives at broadly similar rates in all three cohorts. However, while there is no great difference across the cohorts in men's average occupational level at labour market entry, from around age 22, the occupational attainment of men in the 1958 cohort falls somewhat below, and stays below, that of men in the 1946 as well as in the 1970 cohort, whose own trajectories are almost identical. At the time when men in the 1958 cohort reached their twenties, Britain was entering into a severe economic recession and a period of extensive de-industrialisation and restructuring of the labour market. Male unemployment rates were rapidly rising, and remained at two-digit levels from 1981 through to 1988. Thus, the relatively unfavourable occupational trajectories of these men could reflect the fact that their early labour market experience, and in particular of that of men with higher educational qualifications, coincided with these adverse conditions. Men born in 1958 would appear to establish themselves in high paying occupations to a lesser extent than their counterparts in the 1946 and 1970 cohorts. This interpretation finds further support in an analysis (see Bukodi and Goldthorpe, 2009) of the spread in the level of first occupations on the earnings scale by educational qualifications. This shows that men with degrees and sub-degrees in the 1958 cohort have clearly more heterogeneous entry occupations than similarly qualified men in the other two cohorts.

It should be noted that members, especially male members, of the 1970 cohort were also exposed to unfavourable labour market conditions during their early working lives when the economic recession of early 1990s hit. However, in comparison with the 1980s, unemployment rates remained at double-digit levels for only a fairly short period, and people seem to have experienced less turbulence in their working lives³.

³ While the median cumulative duration of time out of employment is somewhat higher up to age 34 for men in the 1970 cohort than for men in the 1958 cohort, the latter show a lower proportion having no interruption in their employment, and – among men who did have interruptions – a higher proportion of those who have been out of employment for more than half of the time since they entered the labour market.

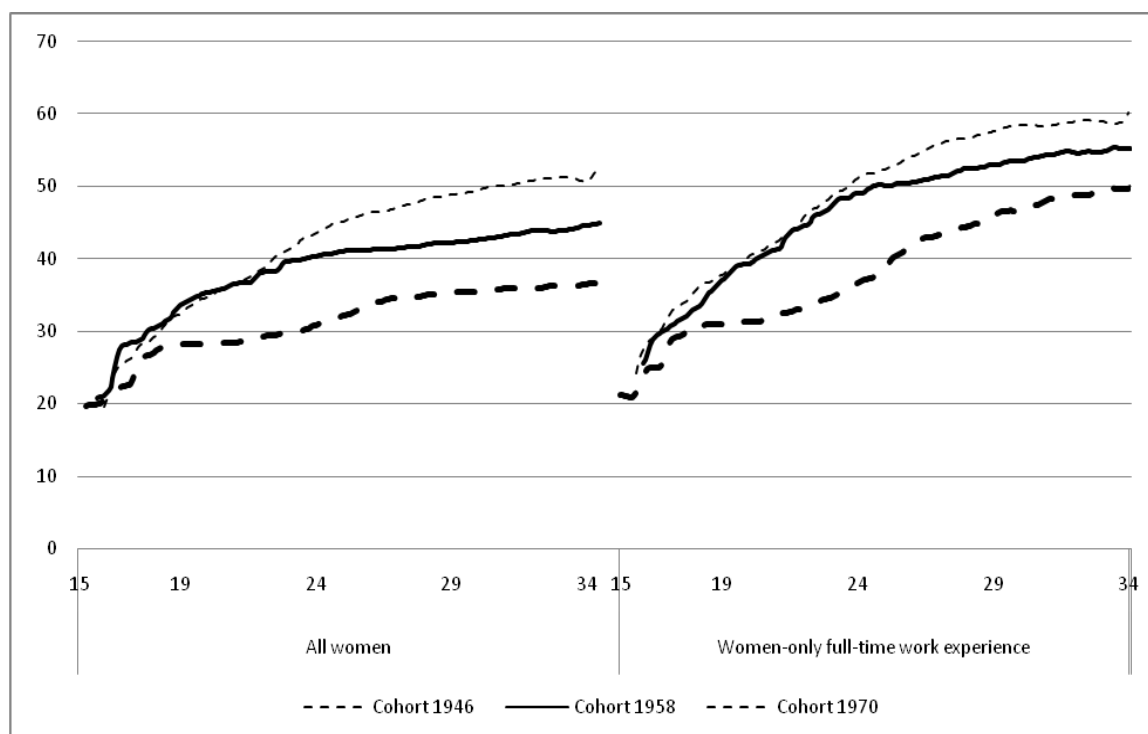
Figure 1.1: Mean occupational earnings scores by age and cohort – men



In the case of women, somewhat different patterns emerge (Figure 1.2). First, women's average occupational level on entry into the labour market is substantially – approximately 15 points – lower than that of the men in the same cohort. Second, wider cross cohort differences are apparent in the average occupational level attained by women at almost all ages, and especially from their early twenties up to age 34. The difference in average occupational attainment is around 10-15 points between female members of the 1946 and 1970 cohorts. In addition, it may be noted that women who have worked only full-time up to age 34 tend to move upwards at a much steeper rate in all cohorts than do their counterparts who have had part-time work experience⁴. Women in the 1970 cohort who have worked only full time attained by their mid-twenties a fairly similar average occupational level to that attained by men in this cohort. Finally, though, one partial similarity in men's and women's occupational trajectories is apparent. In the case of the 1958 cohort, women's average occupational levels from around age 22 fall well below those of their counterparts in the 1970 – though not the 1946 – cohort, suggesting some adverse impact of the economic recession of the 1980s on women's as well as men's occupational careers.

⁴ Note that in the 1946 cohort the proportion of women who never worked part time is distinctively low. Women in this cohort typically returned to part-time work by the time their youngest child reached the compulsory school age. This pattern of employment participation was common to all women, regardless of their educational attainment (Joshi, 1989).

Figure 1.2: Mean occupational earnings scores by age and cohort – women



3.2 Determinants of Occupational Level at Labour Market Entry

I now turn to an analysis of the factors influencing the occupational level at which men and women in the three cohorts first entered the labour market. For this purpose, I pool the data for all three cohorts, and use regression models with the scores of individuals' first occupation on the earnings scale as the dependent variable, and with levels of education and a dummy for managerial and professional parental background as the independent variables (Table 1)⁵.

It can be seen from Model 1 that, in line with Figure 1, there is no tendency for the level of first occupations to rise across the cohorts; rather, men and women in the 1958 cohort tend to enter occupations with lower average levels of pay than do men and women in the two other cohorts.

The main interest here is in the effects of educational qualifications, and in any change in these effects by cohort. It is evident from Model 1 that educational qualifications are in general the major influence on the occupational level at which men and women enter the labour market, and on an entirely expected pattern. However, from Model 2, in which I introduce interaction terms between cohort and qualifications, it can be seen that there is no general tendency for the importance of qualifications to increase across the cohorts. Not only do degrees provide the best returns for both men and women in the 1946 cohort, there is further evidence of a

⁵ In this and subsequent analyses social origin serves only as a control variable, and I do not discuss its effects in detail. Analyses of the role of social origins in men's occupational attainment can be found in Bukodi and Goldthorpe (2009).

specific 1958 effect, in particular for men. For men in the 1958 cohort, qualifications, and especially higher qualifications, have a weaker effect on level of first occupation, or in other words, give lower occupational returns, than for men in the other two cohorts. For women a similar tendency emerges, although the size of the coefficients for qualification*cohort interactions is in general smaller than for men, and the effects are only significant for women with degrees and A-level or equivalent qualifications.

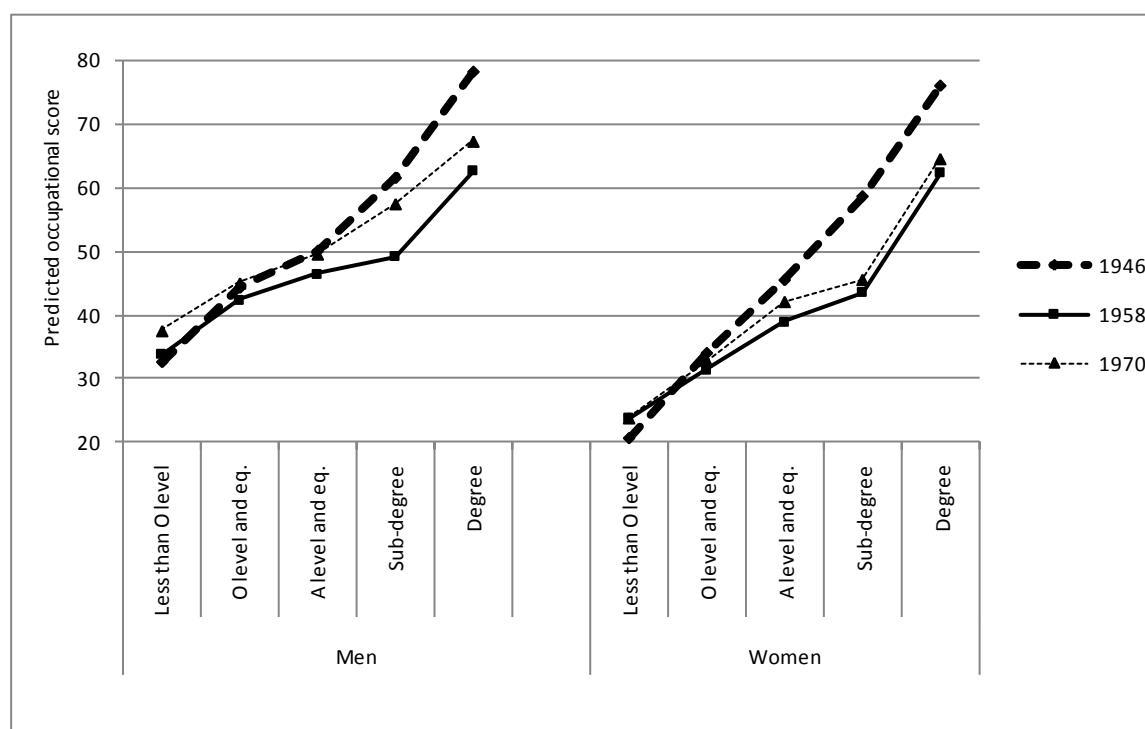
Table 1: Determinants of occupational earnings level at labour market entry (OLS regression)

	Men		Women	
	M1	M2	M1	M2
Cohort 1946	-0.135		1.214	
Cohort 1958	-3.472 **		-1.493 **	
Cohort 1970 (ref.)				
<i>Father: professional or managerial class</i>	3.478 **	3.311 **	3.788 **	4.103 **
<i>Qualification</i>				
Less than O level	-9.680 **	-7.321 **	-11.133 **	-8.755 **
O level or eq. (ref.)				
A level or eq.	4.802 **	4.350 **	8.735 **	9.349 **
Sub-degree/profess. qual.	11.786 **	11.283 **	18.693 **	12.828 **
Degree	23.374 **	22.258 **	31.099 **	31.570 **
<i>Qualification*Cohort</i>				
Less than O level*1946		-4.780 **		-2.656 **
Less than O level*1958		-3.835 **		0.192
O level or eq.*1946		-0.436		1.957
O level or eq.*1958		-2.201 *		-0.885
A level or eq.*1946		0.986		4.176 **
A level or eq.*1958		-2.270 #		-2.457 *
Sub-degree*1946		5.534		9.884 **
Sub-degree*1958		-6.428 **		-1.424
Degree*1946		10.621 **		5.137 **
Degree*1958		-6.111 **		-3.913 **
Constant	44.644 **	44.194 **	32.546 **	31.870 **
R ²	0.162	0.171	0.230	0.250
N	13767		14914	

** Effect significant at $p < 0.01$; * effect significant at $p < 0.05$; # effect significant at $p < 0.10$

In order to illustrate cohort and also gender differences in the effects of educational qualifications on level of occupation at labour market entry, Figure 2 displays predicted occupational earnings scores of first occupation by qualifications under a regression model that includes the same variables as in Model 1 of Table 1 together with terms for the interaction of qualifications and managerial-professional origins, and that is fitted separately for each cohort.

Figure 2: Predicted occupational earnings scores in first job



Note: Predicted scores are calculated under the regression model including the following explanatory variables: managerial and professional background, educational qualifications, education*managerial/professional background.

So far as cohort differences are concerned, the first thing that emerges is that the overall differentiating effect of qualifications is greater in the case of the 1946 cohort than for the two later cohorts for both genders: for men at around 45 points as against 30 points, for women at around 55 points as against 40 points. In the case of women, however, one should bear in mind when interpreting these results that both the proportion of women with sub-degrees and degrees and the proportion of women in employment is much lower in the 1946 cohort than in the two later ones (cf. Woods *et al.*, 2003). In other words, in the 1946 cohort highly educated working women are very likely to form a selected group, dominated by those with advantaged backgrounds or/and those with high career aspirations (Kuh *et al.*, 1997). Figure 2 also gives further evidence that the 1958 cohort had unique experiences, reflecting in the relatively low occupational earnings returns to degrees and sub-degree tertiary qualifications.

As regards gender differences, the overall range of the effects of education is clearly wider for women than for equivalent men in the case of all three cohorts, suggesting that women's occupational level on labour market entry is affected more than is men's by educational qualifications. Although the '1958 effect' is less pronounced for women than for men, the first occupation scores for the 1958 cohort appear generally lower for women as well than for the other two cohorts.

In sum, these results throw doubt on claims that education is of steadily increasing importance across cohorts in determining occupational level at entry into the labour

market. Although education matters more for the level of women's than of men's first occupation, there is no evidence that its importance increased across cohorts for either gender. What is rather suggested is that the experiences of men and to a lesser extent of women in the 1958 cohort are distinctive. For men and women in this cohort qualifications give lower returns than for those in both the 1946 and 1970 cohorts in terms of the average earnings levels of their first occupations.

3.3 Subsequent Occupational Changes

I now aim to extend my analyses to follow the men and women in the three cohorts from the occupational level of their first job to the last occupation they attained by age 34. There are two important questions here: (1) is there evidence of secular change in the courses taken by occupational histories or, rather, of cohort-specific effects; (2) are there differences in occupational histories between men and women, and if so, are these differences weakening or strengthening?

As a way of summarising individuals' occupational histories, I form a fivefold typology, using five broad levels of the occupational earnings scale, each covering approximately 20 per cent of the distribution of scores.

- **Stable:** an individual has not experienced any occupational mobility up to age 34 or has experienced either upward or downward mobility or both, but his/her first and most recent jobs fall into the same level of the occupational scale.
- **Steadily upward:** an individual has experienced one or more upward occupational moves, but no downward move.
- **Unstable upward:** an individual has experienced both upward and downward mobility, but his/her most recent job falls into a higher occupational level than his/her first job.
- **Unstable downward:** an individual has experienced both upward and downward mobility, but his/her most recent job falls into a lower occupational level than his/her first job).
- **Steadily downward:** an individual has experienced one or more downward occupational moves, but no upward move.

I then take this 5-fold typology as the dependent variable in a multinomial logistic regression analysis in which the explanatory variables are: cohort dummies, cumulative work experience in months up to age 34, a dummy for any part-time work experience up to age 34, a dummy for managerial and professional parental background, dummies for educational qualifications at labour market entry, a dummy for whether the individual attained a higher level of qualifications after entering employment, and occupational score in first job.

Results are not presented here in full; attention is focussed on results for cohort and gender differences in occupational histories. Table 2 shows the coefficients for the variable of cohort, for men and women, respectively.

Table 2: Cohort differences in occupational histories up to age 34 (Coefficients from a multinomial logistic regression)

	Steadily upward	Unstable upward	Unstable downward	Steadily downward
	as compared with being stable			
<i>Men</i>				
Cohort 1946	0.025	0.402 **	0.558 **	0.005
Cohort 1958	-0.107 *	0.468 **	0.668 **	0.222 **
Cohort 1970 (ref.)				
N		13767		
<i>Women</i>				
Cohort 1946	-0.160 *	-1.768 **	-2.009 **	-0.696 **
Cohort 1958	-0.167 **	-0.062	0.482 **	0.209 **
Cohort 1970 (ref.)				
N		14914		

** Effect significant at $p < 0.01$; * effect significant at $p < 0.05$

Note: Other covariates in the model: cumulative work experience in months up to age 34, a dummy for part-time work experience up to age 34, a dummy for managerial and professional background, educational qualifications at labour market entry, a dummy for whether the individual attained a higher level of qualifications after career entry and occupational score in the first job.

For men and women alike, it can be seen that members of the 1958 cohort have a higher probability of making job changes that entail downward occupational mobility – i.e. they are more likely to have steadily downward or unstable downward occupational trajectories – than members of the two other cohorts, and have a lower probability of having an occupational history involving upward moves only. Men in the 1958 cohort are also more likely than their counterparts in the 1970 cohort to have unstable upward occupational trajectories. Moreover, further analyses reveal that unstable histories are most frequent among men in the 1958 cohort who have tertiary-level qualifications. These findings appear to be in line with the hypothesis proposed by Moscarini and Vella (2008) and previously noted that in recessions the sorting of people across occupations becomes less efficient.

It can also be seen that there are differences in men's and women's occupational histories, but that these differences are more apparent in the 1946 cohort than in the two later ones. That is to say, women in the 1946 cohort are much less likely than women in the later cohorts to experience occupational mobility of any kind, whereas men in the 1946 cohort are more likely than men in the 1970 cohort to experience histories involving both upward and downward moves.

In sum, the analysis of occupational careers up to age 34 shows that there is no secular change across cohorts in the pattern of men's and women's occupational histories. Instead, further evidence of the distinctive experience of members of the

1958 cohort is shown up. These men and women not only tend to start their working lives at lower occupational levels than the members of the other two cohorts, they are also more likely to experience unstable occupational histories involving upward, but more frequently downward moves. The analysis also shows that gender differences in occupational histories are less pronounced in the 1958 and the 1970 cohorts than in the 1946 one.

3.4 Determinants of Occupational Level at Age 34

I now revert to regression models with the dependent variable being occupational earnings scores at age 34 or for individuals who were not in the labour market at age 34, being occupational scores in their last job⁶. I begin with results for men, as shown in Table 3.

Table 3: Determinants of occupational earnings level at age 34 – men (OLS regression)

	M1	M2	M3
Cohort 1946	-0.677		
Cohort 1958	-3.153 **		
Cohort 1970 (ref.)			
<i>Cumulative work experience</i>	0.020 **	0.020 **	0.019 **
<i>Cumulative work experience</i> ²	-0.014 **	-0.013 **	-0.013 **
<i>Number of occupation</i>	0.306 **	0.294 **	0.304 **
<i>Father: professional or managerial class</i>	5.131 **	5.134 **	5.152 **
<i>Qualification</i>			
Less than O level	-9.933 **	-9.672 **	-9.377 **
O level or eq. (ref.)			
A level or eq.	6.546 **	7.787 **	7.488 **
Sub-degree/profess. qual.	13.880 **	12.015 **	11.654 **
Degree	22.088 **	21.936 **	21.300 **
<i>Qualification*Cohort</i>			
Less than O level*1946		-0.886	-0.314
Less than O level*1958		-3.334 **	-1.048 *
O level or eq.*1946		0.176	0.820
O level or eq.*1958		-3.476 **	-0.593 *
A level or eq.*1946		-1.641	-0.811
A level or eq.*1958		-4.710 **	-1.380 *

⁶ Bukodi and Goldthorpe (2010), in focussing on men's occupational attainment, pursue a different strategy. Since they are concerned that at around age 34 men could differ significantly according to whether or not they had reached a stage of 'occupational maturity', at which the rate of occupational change would significantly decline, they set up a model under which the probability of having achieved this stage is predicted, and then investigate the determinants of occupational level as reached at this stage. However, the concept of occupational maturity is problematic in the case of women's working lives on account of absences from the labour market, part-time working etc. In making gender comparisons I therefore, simply consider occupational level reached at age 34.

	M1	M2	M3
Sub-degree*1946		0.278	0.941
Sub-degree*1958		-0.233	3.211
Degree*1946		-1.824	-1.225
Degree*1958		-2.105 *	-0.975 *
<i>Occupational score in first job</i>	0.268 **	0.269 **	0.303 **
<i>First occupation*Cohort</i>			
1946			-0.015
1958			-0.067 **
Constant	37.241 **	37.188 **	35.736 **
R ²	0.332	0.332	0.334
N		13504	

** Effect significant at $p < 0.01$; * effect significant at $p < 0.05$

Similarly to what could be seen for level of first occupation, a 1958 effect is again apparent (Model 1). Overall, men in this cohort have significantly lower levels of occupational attainment in their mid-thirties than men in either the 1970 or the 1946 cohort⁷.

Turning to variables included to capture the effects of features of work histories, their importance is apparent. Work experience has the expected quadratic shape in the regression: men with more experience tend to attain a higher occupational level, but after an initial strong effect there is some levelling off. Further, in accord with results reported by Neal (1999) and Wilson and Green (1990), the number of occupations held after labour market entry has a significantly positive effect on occupational level at age 34, suggesting that occupational changes during the early stage of working life tend to result in increases in occupational level⁸.

In the case of qualifications, the main effects are, just as with first occupation, strong and again on an entirely expected pattern: the higher the educational attainment, the higher the level of occupation men attain by their mid-thirties⁹. Also, the interaction effects with cohort, as shown under Model 2, are rather similar to those reported for first occupation. I again find a 1958 effect: as compared to men in the 1970 and 1946 cohorts men in the 1958 cohort tend to attain a lower occupational level at age 34, regardless of their educational qualifications. The only exceptions are men with sub-degrees, whose occupational attainment appears to be fairly similar across cohorts. Another point to be noted is that graduates in the 1946 cohort appear to have lost the

⁷ This emerges if either the 1946 or the 1970 cohort, rather than the 1970 cohort, is taken as the reference category.

⁸ The interactions between number of occupations and cohort (not shown here) indicate that the positive effect of number of occupations on occupational attainment at age 34 is weakest for the 1958 cohort.

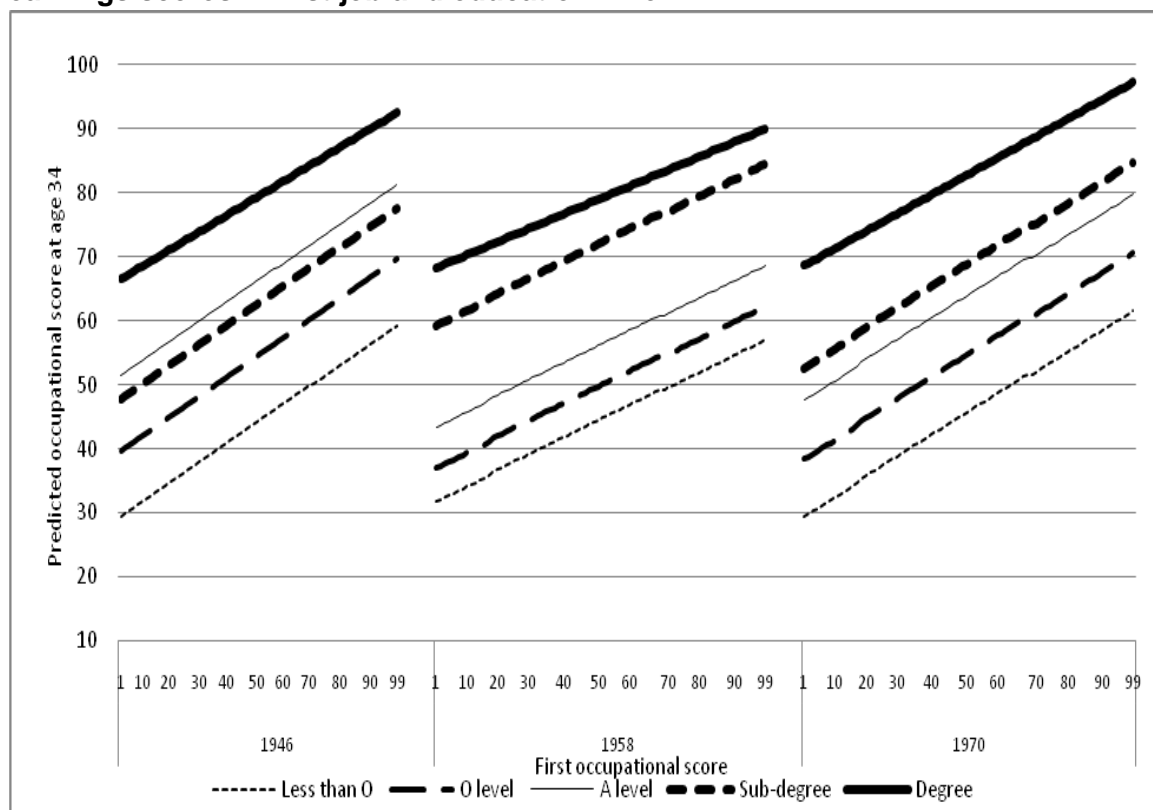
⁹ Further analyses reveal that in all three cohorts, men who increased their level of qualifications after labour market entry have significantly higher levels of occupational attainment than men whose qualifications remained unchanged, although this effect is relatively weak for men in the 1958 cohort.

distinctive occupational advantage they had on entry into the labour market by their mid-thirties.

As regards the effect of first occupation on occupational attainment at age 34, the expected pattern is apparent: the higher the earnings level of occupation on entry, the higher the level a man attains by his mid-thirties. However, as can be seen under Model 3, the positive effect of first occupation seems to be weakest for the 1958 cohort. In this cohort even men who managed to start out at a relatively high occupational level tend to perform less well than their counterparts in the other two cohorts, so far as their occupational level in their mid-thirties is concerned.

Educational qualifications and first occupation both have significant effects on men's occupational attainment at this later stage of their working lives. But how strong are these effects in relation to each other, and how has the relative importance of education and first occupation changed across cohorts? In order to respond to this question, I calculate the predicted occupational scores for a hypothetical man who has the work experience, number of occupations and social origins as averaged across all men in each cohort (Figure 3). The predicted scores come from a regression model that includes the same variables as in Model 1 of Table 3 together with terms for the interaction of qualifications and first occupational score and also that of qualifications and managerial-professional origins.

Figure 3: Predicted occupational earnings scores at age 34 by occupational earnings scores in first job and education - men



Note: Predicted scores are calculated under the OLS regression model including the following explanatory variables: cumulative work experience (linear, quadratic terms), number of occupation up to age 34, managerial and professional background, educational qualifications, first occupational score, education*managerial/professional background, education*first

occupational score, Work experience, number of occupations and parental background are evaluated at sample means.

The slopes of the lines in Figure 3 depict the strength of the effect of first occupational score within each educational category for the three cohorts, respectively. In each cohort, at all five educational levels, our hypothetical man tends to attain a higher occupational level at age 34, the higher the occupational level of his first job. In the 1946 cohort, if he has less than O-level qualifications, his occupational attainment increases by about 30 points across the whole range of first occupational scores. The rate of increase is somewhat smaller, at 25 points, in the 1958 cohort, and slightly greater, at 34 points, in the 1970 cohort. At higher levels of education, the rates of increase are almost the same. This suggests that there are no major differences in first occupation effects between men at various levels of education across the cohorts: occupational level on entry has a substantial impact on occupational attainment at this later stage of working life, irrespective of educational qualifications. However, the importance of occupational level at labour market entry is lowest for men in the 1958 cohort, again, regardless of their educational qualifications.

The vertical distance between the bottom and top lines of Figure 3 shows the overall strength of education effects. This appears to be quite similar across the cohorts, with the maximum effect being 35-40 points, which is greater than that of first occupation – which was 22-32 points. However, while in the 1946 and 1970 cohorts there are clear differences in occupational returns between men with each level of education – except between those with A-level and equivalent qualifications and with sub-degrees – in the 1958 cohort the differences are less marked, in particular as between men with degrees and sub-degrees and as between men with intermediate and the lowest level of qualifications. In other words, in the 1958 cohort there is a tendency for the occupational returns to intermediate qualifications and also for degrees to be distinctively low.

I move on now to analyses of women. Table 4 gives results from regression analyses analogous to those reported in Table 3¹⁰.

As regards cohort effects, the most notable result is that among women too it is those in the 1958 cohort who, overall, tend to have the lowest levels of occupational attainment, just as was the case at entry and also for men at both age 34 and entry.

The effects of characteristics of working life are also similar to those reported for men: occupational level at age 34 is found to increase significantly with amount of work experience and number of occupations held. For women, I included an additional feature – a dummy for whether or not the woman had worked only full time up to age 34. It is not surprising to find that women who were exclusively in full-time

¹⁰ In the 1946 cohort around half of women, in the later cohorts around a quarter of women were not employed at age 34. In order to check whether this fact has any major effect on the results I present in this section, I re-ran the models only including women who were employed at age 34. The sign and the magnitude of the regression coefficients appeared to be essentially the same to those reported here.

employment attain a substantially higher occupational level by their mid-thirties than those who had worked part-time to some extent¹¹.

Turning to education, one can see that the main effects are strong and on a similar pattern to those reported for men. When the interactions between qualifications and cohort are included (Model 2), again, the returns to educational qualifications are significantly lower for the 1958-born women than for women in the other two cohorts at all levels of education, but especially at intermediate levels. Further, graduates in the 1946 cohort no longer have higher occupational returns at their mid-thirties than graduates in the two other cohorts, as found also for men.

Occupational level at entry exerts a strong positive effect on women's later occupational attainment, just as for men. However, the interaction effects with cohort (Model 3) are different for women than for men. With men, the effect of first occupation was the weakest in the 1958 cohort, but with women, there is no indication of any significant difference between members of the 1958 and 1970 cohorts, while the effect of first occupation is very strong in the 1946 cohort.

Table 4: Determinants of occupational earnings level at age 34 – women (OLS regressions)

	M1		M2		M3
Cohort 1946	-1.234	*			
Cohort 1958	-6.310	**			
Cohort 1970 (ref.)					
<i>Cumulative work experience</i>	0.031	**	0.035	**	0.036
<i>Cumulative work experience</i> ²	-0.001		0.000		0.000
<i>Number of occupation</i>	1.117	**	1.119	**	1.078
<i>Only full-time work over the career</i>	10.784	**	10.737	**	10.820
<i>Father: professional or managerial class</i>	3.226	**	3.410	**	3.489
<i>Qualification</i>					
Less than O level	-9.564	**	-10.285	**	-10.537
O level or eq. (ref.)					
A level or eq.	8.302	**	9.998	**	10.295
Sub-degree/professional qual.	18.013	**	8.745	**	9.090
Degree	26.661	**	25.026	**	25.788
<i>Qualification*Cohort</i>					
Less than O level*1946			-2.590	**	-6.013
Less than O level*1958			-2.274	*	-2.770
O level or eq.*1946			-1.737	*	-7.756
O level or eq.*1958			-15.609	**	-15.626
A level or eq.*1946			-4.440	**	-11.397
A level or eq.*1958			-9.882	**	-9.715
Sub-degree*1946			1.160		1.200

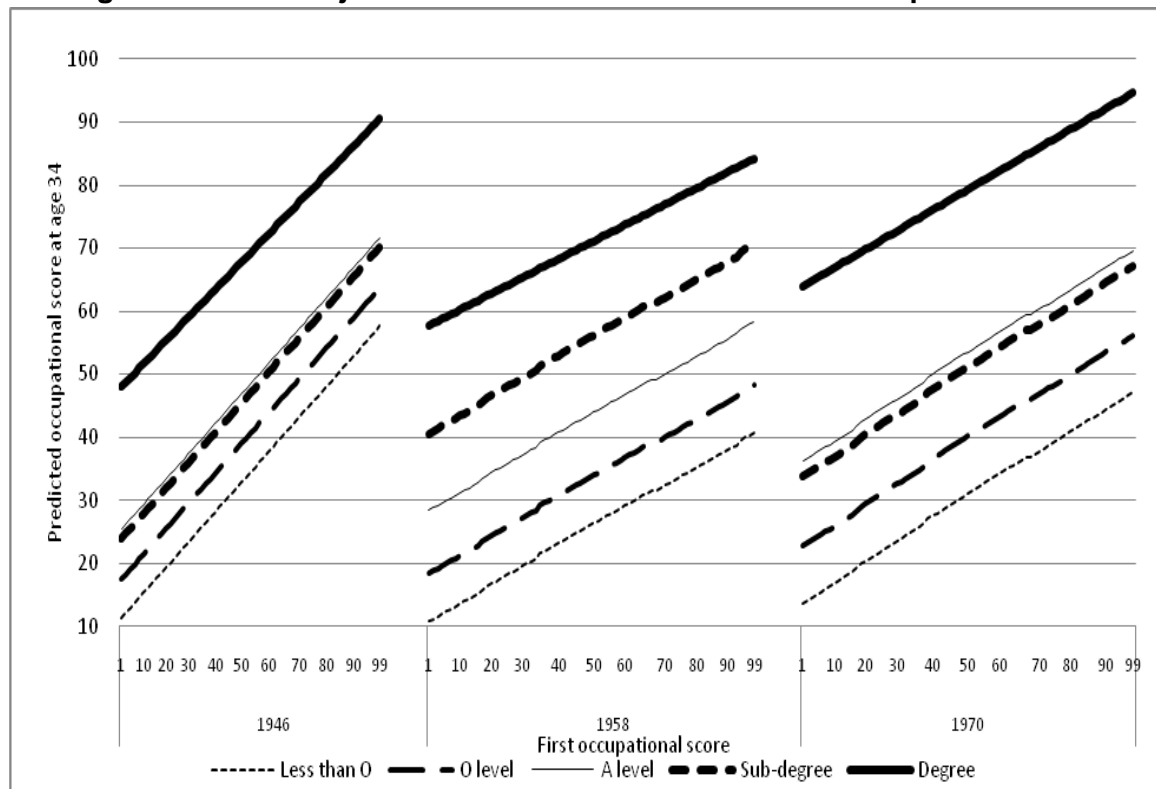
¹¹ However, interactions between the dummy for full-time employment only and cohort indicate that the positive effect of working only full time is strongest in the 1958 cohort, and weakest in the 1970 cohort. In other words, the 'penalty' of working part time appears to be greatest in the 1958 cohort.

	M1	M2	M3
Sub-degree*1958		1.398	1.691
Degree*1946		-1.995	-1.045
Degree*1958		-3.375 **	-2.905 *
Occupational score in first job	0.335 **	0.324 **	0.296 **
First occupation*Cohort			
1946			0.171 **
1958			-0.009
Constant	16.741 **	17.191 **	17.995 **
R ²	0.402	0.405	0.409
N		14673	

** Effect significant at p < 0.01; * effect significant at p < 0.05

Figure 4 shows predicted occupational scores for a hypothetical woman who has work experience, number of occupations and social origins as averaged across all women for each cohort, but who has had some part time work experience up to age 34.

Figure 4: Predicted occupational earnings scores at age 34 by occupational earnings scores in first job and education – women who worked part time



Note: see Figure 3.

The strong effect of entry occupational level on later occupational attainment, irrespective of education, is clearly brought out for the 1946 cohort. If our hypothetical woman in this cohort has O-level or equivalent qualifications and entered the labour

market in a low level occupation, her occupational score at age 34 is predicted to be around 20-25, whereas this would be around 60 if she entered in a high-level occupation. A similar rate of increase - i.e. at around 35-40 points - apparent at all other levels of education. However, the rates of increase are smaller for women the 1958 and 1970 cohorts, at around 30 points¹².

The vertical distance between bottom and top lines of Figure 4 shows a notable difference in the magnitude of the education effects between women in the 1946 and those in the 1958 and 1970 cohorts. In the 1946 cohort, having a degree, compared with no qualification, increases our hypothetical woman's occupational score at her mid-thirties by around 35 points, while in the two later cohorts the rate of increase is greater, 45-50 points. However, as between women in the 1958 and 1970 cohorts, we scarcely find any significant difference in the overall strength of the effect. This suggests that, for women, the importance of qualifications relative to that of first occupation has increased between those born in 1946 and those born in 1958 or 1970. It may be recalled that this was not the case for men, for whom no significant changes in the relative importance of education and first occupation could be detected across cohorts. At the same time, the graphs of Figure 4 also show an important communality of women with men: in the 1958 cohort there is a tendency for occupational earnings returns to degrees and A-level or equivalent qualifications to remain lower than in the other two cohorts.

In sum, there is rather little evidence of cross-cohort secular change in the relationships between first occupation, education and later occupational attainment, and especially so in the case of men. In the case of women, the strength of qualification effects does appear to have increased between the 1946 and the 1958 cohorts, but remains stable between the 1958 and the 1970 cohorts. While it is true that the overall strength of first occupation effects on subsequent occupational attainment is greater for women in the 1946 cohort than for women in the two later cohorts, it is again the case that the 1958 and 1970 cohorts are similar in this respect. Far more notable than any secular changes are cohort-specific effects: occupational returns to intermediate and higher tertiary qualifications are significantly lower for men and women in the 1958 cohort than for those in either the 1946 or the 1970 cohort.

¹² If occupational scores are predicted for an alternative hypothetical woman who never worked part time, the magnitudes of first occupation and education effects appear to be very similar to those shown for women with some part-time work experience.

4. Conclusions

In this paper I have investigated the role of educational qualifications and occupational level at labour market entry in the process of individuals' occupational attainment. I have raised two research questions: (1) whether or not a secular tendency exists for education and occupational level in first job to become increasingly dominant determinants of individuals' occupational attainment in later life; (2) whether or not there are gender differences in the importance of education and first occupation in the later occupational attainment. The main conclusions that I would draw from the analyses are the following.

First, educational qualifications appear to be more important than the other factors I consider in determining individuals' occupational attainment. But while, as expected, qualifications have stronger effects for women than men at both labour market entry and in the mid-thirties, I find no consistent evidence that the importance of qualifications is becoming greater over cohorts, either for men or for women.

Second, the independent effect of entry occupational level on men's and women's later occupational attainment is equally strong. However, there are again no indications that this effect has been strengthening across cohorts. Moreover, the analyses also show that the frequency of occupational change is associated with a higher occupational level in later working life. Thus, it would appear plausible to say that upward work-life mobility continues to play an independent part in occupational attainment for both men and women: that is, even when controlling for level of first occupation and qualifications.

Third, although changes across the three cohorts are not consistent with the assumption of education and first occupation playing an increasing role in the occupational attainment process, they do clearly point to the possibility of cohort-specific effects. The experience of men and women in the 1958 cohort is regularly found to differ from that of men and women in both the earlier and later cohorts. The early stages of the working lives of members of the 1958 cohort, and especially of those with higher secondary or tertiary qualifications, coincide with a period of severe economic difficulties, labour market re-structuring and continuing high levels of unemployment. Adverse effects on level of first occupation are then indicated, in particular for those with degrees and sub-degrees. In their mid-thirties this disadvantage persists, but in this case is most pronounced for men and women with intermediate qualifications. Further, the analyses of occupational histories also indicate that both men and women born in 1958 are more likely to experience instability in their working lives, and in particular more downward occupational moves, than are members of the 1946 or 1970 cohorts. In other words, unfavourable labour market conditions at employment entry and throughout the early working lives of members of the 1958 cohort would appear to have had lasting adverse effects on their occupational histories.

Fourth, the results indicate a weakening of gender differences in processes of occupational attainment across cohorts. Women in the 1970 cohort who never worked part time in fact attained fairly similar occupational levels by their mid-thirties to men. Further, although I repeatedly find that educational qualifications play a

greater role in women's than in men's occupational attainment, the analyses do not reveal any further increase in the strength of the effects of education as between women in the 1958 and 1970 cohorts. Furthermore, as regards the specificity of the 1958 cohort, this also shows up for women, just as for men.

In sum, the results of this study call into question the widely held assumptions regarding secular trends in processes of occupational attainment. Among men and women covered by the three British birth cohort studies, it is in fact the absence of systematic, over-time, as opposed to cohort-specific, changes in these processes that is the most striking finding.

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