Not by degrees: Education and social reproduction in twentieth-century Britain

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Abstract: Previous research using the combination of a historical dataset with one using all available social surveys in Britain since the 1960s suggests very clearly that there has been a slow, but steady decline in the rate of social reproduction, as indicated by the relationship between the occupational and social locations of fathers and sons, over the past two centuries. Using only the modern social surveys, this paper extends that work to examine the role of education and qualifications in the process. The 'obvious' explanation, that increasing educational opportunity has been an important element in the trend towards greater openness, at least in the twentieth century, is not borne out by the analyses. On the contrary, comparison of pre- and post-1945 birth cohorts shows that the influence of origin on education is either unchanged (in the case of women) or has increased (in that of men). The influence of education on destination is also either unchanged (men) or has decreased (women). The direct influence from origin to destination is unchanged for women, but it has declined in the case of men by a sufficient amount to lead to the overall increase in openness. There are identifiable trends over time for the pre-1945 cohorts that are consistent with these differences. However, analysis of the post-1945 cohorts suggests greater stability.

The analyses are repeated using categorical, ordinal and interval-levels measures of education, with consistent results. The most recent cohort appear to be out of line with the general conclusions, exhibiting a much greater degree of openness, and an attempt is made to determine how far this may be a result of the fact that they are still at early stages in their work lives.

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Introduction

In a previous article two of the authors presented evidence showing that over a period of some 200 years there had been a steady, if very slow, weakening of the relationship between the social location of fathers and sons as measured by scores on the CAMSIS scale of occupations. Although the experience of particular ten-year birth cohorts may have been above or below the trend line, the general tendency was clearly apparent. For that analysis we used two sources: a historical data set made up of persons collected by family historians and a combined data set of those social surveys carried out since the 1960s that included detailed information on the occupations of fathers and children. The picture for daughters was more complex, particularly as far as the historical data set was concerned, but the results for the most recent cohorts were very similar to those for sons.

Although (again as regards sons) the results from the two sets of data were consistent, there remained a question mark over the most recent trends. There had clearly been a decline in the strength of the father-son association between the pre- and post-second world war cohorts, but the latter showed a levelling off (apart from the most recent, those born in the 1970s). The decline through the nineteenth century in the extent of social reproduction over generations seems to have been associated mainly with routes of upward social mobility other than through education, particularly entrepreneurship. The levelling off appears to have occurred for precisely those generations, born after 1945, who grew up in the period of the welfare state and who should have benefited from the greater equality of opportunity that increased educational provision was intended to provide.

At a more theoretical level, there is an important school of thought that has argued that industrial societies would be marked by a move from ascription, occupational selection on the basis of particularistic criteria such as family and parental background, to achievement, increased reliance on universalistic criteria such as personal merit and ability. As two of the major proponents of this view put it: 'The structural conditions in our industrialized society governed by universalistic principles . . . are the causes of its high rate of occupational mobility' (BLAU and DUNCAN 1967: 431). On this view, education has an important role in allowing the identification and certification of those with ability and therefore as a mediating institution between family background and occupation.

However, the overall outcome, in terms of the association between origin and destination, is

the result of a complex of factors, of which education is only one. Although it by no means does full justice to the complexity, we can, with the modern data sets, at least disentangle from the overall association between father and child that part which goes via the education route. This component can be separated from that which operates more directly – or rather, in all other, unspecified ways. This decomposition should give us a clearer idea of what changes in the processes involved, if any, may be occurring, even if it does not fully answer the question of whether the long term trend has now come to a halt.

One possibility, as argued by Saunders (BOND and SAUNDERS 1999; 1995; 1997) is that Britain has already attained a state of meritocracy – that is, that educational, and so occupational, selection is made on the basis of ability. Given assumptions about the heritability of 'ability' (or 'intelligence'), then a certain degree of association between the positions of fathers and children is to be expected. (Note that this also makes assumptions about the association between the ability of fathers and mothers.) This is certainly consistent with the results that we have previously presented, though the idea that the meritocratic principle was largely established through the nineteenth and early twentieth centuries and was fully achieved by 1944 is rather surprising. Saunders, in fact, originally based his argument on the data from the Oxford Social Mobility Study (GOLDTHORPE 1980), in which the oldest respondents were born in 1907. Subsequently, he seems to have modified his position to argue simply that ability is a more important factor than parental background. So, it remains the case that, even on his line of argument, there appears to have been no increase in the relative importance of ability as against other factors.

This point is taken up by Breen and Goldthorpe in their critique (BREEN and GOLDTHORPE 1999; BREEN and GOLDTHORPE 2001), in which they argue that this consideration of the direction of change over time is the most productive approach. Their conclusion from a comparison of 1958 and 1970 birth cohorts is that no movement in the direction of a greater emphasis on ability is discernible. Their explanation is in terms of rational choice theory, that the increase in tertiary education means that this route is more risky for working class children, for whom the costs of failure would be greater. The consequence of their greater tendency to avoid using it is a strengthening of the relationship between social background and education. In fact this echoes doubts that were raised earlier by Heath. His conclusion from comparing respondents in the Oxford Mobility Study born between 1913 and 1932 with those born between 1933 and 1947 was that 'The influence of social origins on educational attainment has actually *increased* [emphasis in original]' (HEATH 1981: 170).

In his most recent contribution, Goldthorpe (2003) has also argued that the other arm of the

meritocratic argument is also flawed and that employers' selection processes do not stress qualifications as much as personal (ascriptive) qualities. He also interprets the interaction between background and education – the fact that the education/destination relationship is weaker for the service class – as indicating a greater utilisation of alternative, non-educational resources if that route fails

Data

The data are those studies available from the UK ESRC Data Archive that have detailed information on the occupations of fathers as well as of the respondents. They cover the period from 1963 to 2001 and include the British General Election Studies, some years of the General Household Survey and the British Household Panel Study[1]. Integration of a number of studies obviously creates problems with respect to finding variables that are comparable across all of them. Inevitably, this means that we have only a small number of variables to consider: father's occupation as an indicator of background (origin), highest qualification obtained (education) and child's occupation (destination).

Occupational position: Origin and destination are both measured using CAMSIS, which is a measure of generalised advantage developed from analyses of patterns of social interaction (PRANDY and LAMBERT 2003). A particular advantage of this for the present purpose is that there are versions available for all of the different occupational classifications that have been used in the various studies. However, the different versions are comparable throughout the period because in each case they reflect the relative standing of an occupational group within the hierarchy around the time of the study.

Education and qualifications: The question of how to measure education and qualifications – or indeed what 'measure' means – raises a number of interesting issues. The most practical, immediate one is that in the present case we are dealing with a relatively large number of different studies and with individuals who received education over an extended time period and so with differing forms and amounts of educational provision. Since there is no agreed standard way of categorising educational qualifications, the different studies also use a variety of classifications, varying in their degree of detail and homogeneity of categories. The attempt to construct a uniform categorisation is therefore highly constrained. It has to provide for all of the different classifications to be mapped into it.

In fact, the constraints were more complex because we also wanted to develop a categorisation that met the criterion of ordinality. Type of educational establishment attended

and type of qualification are both 'measures' using only the broadest of definition of that term, the nominal level. There exists in most people's minds, though, a conception of the 'superiority' of some forms of education and qualifications to others and, amongst other things, this motivates their decisions about which forms to pursue or encourage their children to pursue. Of course, popular conceptions are unlikely to be uniform and people will vary in their ordering of different forms of education and qualification. In part this will reflect personal and sub-cultural preferences and in part, too, will reflect different aspects of the education and qualifications themselves. These are social constructs and, as such, incorporate a complex set of characteristics, which could not be captured by any single ordering.

Rather than thinking of the educational qualification categories in terms of their internal relationships to one another, a more fruitful approach to establishing an ordering is to consider them in terms of their external relationships to some other set of social objects. The most obvious of these for our present purpose – which is not to say that there may not be other purposes – is occupation. 'Occupations' are, again, social objects with complex characteristics, but in this case we already have a measure, CAMSIS. We can therefore think in terms of the relationship between education and qualifications and this CAMSIS measure. In other words, we consider that aspect of education and qualifications that contributes to a particular occupational location as indicated by its CAMSIS score. Another way of seeing this is as the exchange 'value', in CAMSIS score terms, of any particular form of education or qualification.

Our categorisation, therefore, had to meet the additional constraint that the mean values of CAMSIS for those with each level of education should be in a consistent order across the whole time period. Sampling variations make this difficult to achieve if every year of birth is considered separately, but it did prove possible for every ten-year birth cohort. The final schema is one in which we reduced the original 39 categories to a fivefold classification, as follows: (1) none; (2) low secondary (mainly O-level GCE and apprenticeship); (3) high secondary (mainly A-level GCE and commercial/secretarial qualifications); (4) low tertiary (mainly other college qualifications, nurse training and ONC/OND); (5) high tertiary (mainly university and teacher training).

Figure 1 shows the percentages in each category of education and qualification, by sex and five-year birth cohort. It is clear that there has been a steady decrease in the proportion with no qualifications and in increase, particularly, in those with tertiary education. Although this has to some extent been matched by an increase in the number of occupational positions

requiring these higher levels and there are complex issues of distribution, one overall consequence has been a decline in the 'exchange value' of each level as represented by the mean CAMSIS score of the occupations held by those with that level. In the case of men, for example, the mean score of those born 1915-19 with high tertiary education was 79 and with high secondary 54; the comparable figures for those born 1965-69 are 67 and 52. For women over the same period the value of a tertiary education has declined from 71 to 67 and that of high secondary education from 58 to 52. Changes of this kind introduce additional complications into the analyses, but we shall defer discussion of how these might be dealt with until later.

Results

The basic set of relations that we are considering is a relatively simple one. The overall influence of the father's position on that of the child can be broken down into two components. The first is that involving education, which itself has two elements: the influence of father's occupation (origin) on educational attainment and the influence of educational attainment on the occupational position of the child (destination). These elements in combination can be seen as the operation of the educational system in matching children's abilities to the requirements of the occupational order – or, alternatively, as the extent to which parents are able to utilise educational resources as a means of transferring their own position to their children. The second component is the direct influence from father's to child's occupation, independently of the indirect effect through education. This can be seen as the utilisation of resources other than education in the process of transmission: inheritance of a business, social contacts or the passing on of specific skills, for example. In addition, we should also consider whether father's occupation and education interact in any way. That is, whether the effect of education on the child's occupation varies according to father's occupational position or, differently expressed, but formally equivalent, whether the direct effect of father's occupation on that of the child varies by the latter's educational level.

To the three basic variables in the set we can add time, since it is possible change over time that is a major point at issue. There are two ways in which one can deal with changes over time. The first is to compare the results of analyses based on earlier and later cohorts separately; the second is to carry out a combined analysis using all cohorts and including a variable or variables that specifically deal with time. One such variable is cohort or date of birth itself, which is necessary because of the changes over time in the proportions achieving particular educational levels, but the main ones are those that involve further interaction

effects: that is, between origin and cohort and education and cohort. Our presentation combines these two approaches in the way that, in our view, most clearly shows the trends. First, we make a broad division into two time periods, with the cutting point at around the year when the change seemed to occur: those born 1880-1944 and 1945-79. Then, within these, we introduce interaction variables using date of birth, to cover changes over time.

As was said earlier, we know that the overall association between origin and destination has weakened over time – at least for men, the case of women is more complex. The simplest assumption, therefore, would be that this has been the result of a decline in the ability of parents to transmit their advantage by means of education. The conventional meritocratic argument would hold both that educational selection is increasingly on the basis of ability and that access to occupations is increasingly on the basis of qualifications. Achievement, rather than ascription, is seen as the dominant principle. For the association between origin and destination via education to decline, the origin-education relationship would need to be weakening at a faster rate than the education-destination relationship is strengthening.

Education as a categorical variable

We begin by considering education in terms of the five categories, treating each independently. Table 1 shows the results of a multinomial logistic regression in which each category is compared with having no qualifications. For each educational level Table 1 indicates, for men and women in the two time periods, the increased probability of achieving that level rather than no qualification for each additional unit increase in father's CAMSIS score or each later year of birth. The size of the coefficients has to be considered in relation to range. For example, father's CAMSIS score has an inter-quartile range of 35 to 59 in the first period (that is, the middle 50 per cent of all cases fall within that range). The chances in that period of the son of a father at the upper level achieving a high tertiary education are 4.3 times greater than those of the son of a father at the lower level ($4.3 = \exp((59 - 35) \times .063)$). The comparable figures for the later period are 36 and 59, making the chances (with a value of B of .072) 5.4 times higher. A comparison of the basic coefficients shows that, with just one exception (low secondary education for women), there has been a similar increase in the value from the earlier to the later period.

In other words, between the pre- and the post-war generations there has been a widening of the social differentials in educational attainment. Table 1 also shows that the higher the educational level, the wider are these differentials. As we would expect, given the overall

expansion in educational provision, the coefficients relating to year of birth are generally quite large in relation to the number of years covered. Low tertiary education was the fastest increasing for men in the early period and for women in the latter. The rate of increase in high tertiary education for men has slowed down, but continues at much the same level for women. As the effects from father make clear, the process of expansion is one that has predominantly benefited the more advantaged. Rather than greater educational provision having led to a weakening of the influences of origin, they actually became stronger. Parents became more, not less, successful in utilising educational resources in attempting to transmit advantage.

This result creates something of a puzzle. The overall association between fathers and sons (less clearly, daughters) has got *weaker*, but now we see that one component in that link, the association between father's social location and child's educational attainment, has got *stronger*. The nature of the relation between education and destination is now clearly a critical issue. The results of an analysis of this link are in Tables 2a and 2b, dealing with men and women respectively and, again, the two time periods.

Looking first at men, in Table 2a, we can at least see part of the solution to this puzzle. Whether looking at the basic variables alone (shown in the first pair of columns for each period) or these together with interaction effects (the second pair), it is clear that the direct influence of fathers' on sons' positions has weakened: increased reliance on the educational route as a means of ensuring social reproduction has been accompanied by a decline in the use of alternative resources. In the first period, ignoring the interaction effects, every ten-point increase in the father's score would add directly 2.7 points to that of the son; in the second period this falls to 2.2 points.

In fact, the decline in the non-educational link seems to be greater than the increase in the educational. Dealing with four separate categories makes it difficult to determine clearly, but there does not seem to be evidence of a weakening of the link between education and destination, which is the other possible mechanism by which the decline in the overall association might be explained. Both levels of secondary education are worth slightly more, 5.4 and 9.7 CAMSIS scale points, as against 5.0 and 8.8, but low and high tertiary education are worth slightly less: 12.6 and 24.2 as against 14.0 and 25.5. It is worth noting, though, that the standardised coefficients all increase, suggesting that education may be having a stronger influence. With dichotomous variables this is a consequence of changing proportions, but the whole question of the effect of that change is an important one that requires a slightly

different approach, as we attempt later. For the present, though, it is worth noting that in both periods the returns to the four levels of education, in terms of destination, illustrate the way in which they were constructed using mean CAMSIS scores.

Introduction of variables involving interactions adds only slightly to the explanation, but some are statistically significant. The apparent increase in the value of the coefficient representing the direct effect from origin to destination has to be set against the decrease that is associated with most levels of education. The value of .29 for the father-son link in the first period, for example, represents the size of the effect amongst those with no qualifications. This value reduces by .13 (to .16) amongst those with low tertiary and by .15 (to .14) amongst those with high tertiary education. The most important such reduction in the later period is associated with high tertiary education. These differences can be interpreted as indicating less reliance on other forms of resource on the part of those parents who are successful in ensuring tertiary, and particularly high tertiary, education for their sons. It should be noted that there is a formally equivalent interpretation that would emphasise, in this example, the decrease in the value of tertiary education for those from more advantaged backgrounds.

The other more important interaction effects are to be found in the first period and relate to year of birth. They indicate that both the value of high tertiary education and the strength of the direct of origin are diminishing over time. Both are consistent with differences between the two periods that we have noted and together they suggest that for pre-war cohorts there was a changing situation, which has largely stabilised for those born post-war.

The results for women shown in Table 2b suggest that in their case, too, there has been a small decline in the value of most educational qualifications in terms of occupational attainment. As with men, the most marked difference is between high tertiary-level education and the rest. There is also a similar pattern to that of men in the interaction between origin and education: the value of a qualification is greater for those from the less advantaged backgrounds (or, conversely, the influence from background is weaker for those with higher qualifications). Probably the main respect in which the results for women differ from those for men and is that the direct effect from background is much lower. It is arguable that the kinds of resources other than education that can be used for social reproduction are less easy to use for daughters, or certainly are less likely to be.

Education as a quantitative variable

Our analyses so far have only made use of education as a nominal variable with five categories, but all of the results, in terms of determinants and effects, have been consistent with treating the categories as ordered. Analyses using specific categories are informative, but if it can be shown to involve no significant loss of information, there are also advantages to using a single ordinal variable. In fact, our aim is to go further and to use an interval-level measure of education, because this brings additional advantages. However, we need first to be able to demonstrate that this is a legitimate extension.

We shall use structural equation modelling (SEM) both to check the use of an ordinal measure of educational level and to apply a more rigorous test of the differences between the two time periods. A great advantage of SEM is that it allows us to compare the same model on several groups and to test whether particular coefficients are significantly different. The SEM program used, LISREL, has the additional facility of allowing analysis of ordinal variables, using polyserial correlations, which are good estimates of the correlation between underlying continuous variables.

The unconstrained and preferred solutions are shown as path models in Figure 2. Only the basic variables are included – one of the drawbacks of the use of an ordinal measure is that it cannot be used to create interaction terms, because this requires variables to be multiplied together. Unconstrained models for men and women separately, in which all coefficients are allowed to vary between the two time periods, have values of χ^2 of 23.27 (men) and 24.1 (women) with 2 degrees of freedom. Setting any of the coefficients equal in the two periods will increase the degrees of freedom, but at the price, almost certainly, of increasing the value of χ^2. A model with only a small increase in χ^2 relative to the degrees of freedom would be more parsimonious without being significantly different.

In the case of men, the unconstrained path coefficients with the most similar values are those from education to destination. Allowing these coefficients to be equal seems to be the most satisfactory of the many alternative models, yielding a χ^2 of 38.86 with 3 degrees of freedom. The RMSEA value of 0.19 is well below the standard criterion of 0.25; further constraints, with more degrees of freedom, give values above this level. The most satisfactory model for women is more parsimonious, but the pattern is the reverse of that for men. In their case the only path that differs significantly is that from education to destination. This gives a model with a χ^2 of 33.1 with 4 degrees of freedom and an RMSEA value of 0.17.

Comparison of the values of R^2 in this and the previous analyses using nominal categories

suggests that very little information has been lost by using a single measure of education. We do, though, have a clearer idea of causal influence as indicated by path coefficients. For men there has been a shift from the more direct processes of social reproduction towards those that operate through the educational system. Advantaged parents have become more successful in obtaining superior education for their sons, although their ability to capitalise on this has been limited by the fact that there has been no increase in the influence of education in determining the son's social location. The extent of the decline in the importance of the direct processes has actually led to a slight increase in openness. However, it should be noted that the shift is only one of emphasis. In the earlier period the direct path of 0.26 compares with an indirect one of 0.15 (0.29 x 0.51); in the later period the paths are 0.21 as against 0.18.

The direct effect for women has been, as we noted earlier, much weaker (0.13 in both periods). Conversely, the influence of origin on education is stronger (0.38), as is that of education on destination. The latter, though has declined, from a path value of 0.62 to 0.59. It appears that, as far as education is concerned, the patterns for men and women are becoming more alike.

These results put the conclusions from the previous analysis on a sounder statistical basis. They also raise an important issue that we have hinted at earlier, but which now needs to be confronted head-on. This analysis uses an ordinal measure to estimate an underlying continuous variable, but that underlying variable has no metric, or unit of measurement. It makes no sense, therefore, to talk of unstandardised coefficients, which is why only the standardised forms, or paths, are shown in Figure 2. We cannot say how many units of father's CAMSIS translate into a 'unit' of education, nor how many units of education translate into the child's CAMSIS score. What the paths indicate is how much of the variance in education is explained by origin and how much of the variance in destination is explained by education.

As a general rule, standardised and unstandardised coefficients tend to tell much the same story, but the former can be strongly affected by changes in distributions. In the present case, the major change in distribution has been in educational provision: as we have seen, many more people are attaining the tertiary level. So, we find that the path models in Figure 2 suggest that for men background has become more important as a determinant of education and that for women education has become slightly less important as a determinant of destination.

There is an alternative definition of 'importance' that would stress the unstandardised form of the coefficients. In part, the choice of how 'important' is defined will depend on one's perception of the nature of education in measurement terms. Those who stress the intrinsic nature of specific categories will choose an interpretation in terms of unstandardised coefficients, while those who see these categories as representing an underlying interval-level variable will choose the alternative. The latter is our own view. We would argue that high tertiary education, for example, is not the same when it is made available to 30 per cent of the population as it is for 5 per cent. The idea of 'unstandardised' coefficients is itself problematic: categories may retain the same label, but these labels do not represent the same form of experience.

Seen this way, the general rise in educational levels is a form of inflation comparable to the general rise in money incomes and prices. It would obviously be desirable to try to allow for this change, in much the same way as over-time comparisons would substitute 'real' for 'money' values. To do this, though, it is necessary to perform arithmetical operations that are not legitimate for an ordinal variable. In order to move from an ordinal to an interval measure we can take up the point that was introduced earlier, when we suggested that we should use the mean CAMSIS scores of the destination occupations of those with each level of education as a check on the ordering of the categories. Why not take the extra step of scoring each category with these mean CAMSIS values? The move from an ordinal- to an interval-level measure is achieved by adjusting the distance between categories to reflect differences in what they are 'worth' in occupational destination terms.

Even with an interval-level measure of education there is no simple way of adjusting for 'inflation'. Some solutions – adjusting the value of education year by year, for example – would be too complex and would run into problems of sample variability. We have adopted what seems to us to be the most conservative solution, which is to adjust the values for each of the two main time periods that our analyses are concerned with; that is, those born before and after 1945. We have modified the basic scores to standardised values within these two periods, so that the means and standard deviations are made equal at 5 and 2 respectively. For convenience and clarity, all scores are then adjusted to a minimum, no qualifications, value of zero. This has been done separately for men and women, which helps in detecting trends, but it is important to remember that, in 'raw' terms, the average level of education for women is lower than that for men. To make this clear, we show in Figure 3 both the distributions and the new, adjusted, scores for men and women in the two time periods.

As can be seen, there has been a decrease in the proportions of men and women with no qualifications and an increase in the other categories. Women have higher proportions with no qualifications, particularly in the first period; otherwise, the high secondary category is the only one in which they predominate. The major point to note about the scores is that the step from low to high tertiary education represents about a half of the whole range in every case. For men, the other steps are roughly equal, although that from no qualifications to low secondary is a little larger. This is even more the case for women.

The results using this new measure of education are shown in Tables 3 and 4. Table 3 gives the determinants of education, Table 4 the determinants of destination. Looking, first, at the influence of origin on educational attainment (Table 3), for both men and women there is a small, but clear, strengthening of the influence of father's occupation on educational level between the two periods. One way of looking at this is that in the first period it would have taken a rise of 67.4 in father's CAMSIS score to move the 1.3 units from no qualifications to low secondary; in the second period an increase of 54.1. The comparable figures for women are 96.7 and 84.8. Year of birth shows, as we would expect, a tendency for educational level to have risen over time. For women this trend is generally more marked and continues in the second period, where it seems to slow down for men. It is important to bear in mind, though, that the variance explained remains relatively small. The influence from father increases, but its effect is still relatively minor.

The standardised coefficients using these basic variables can be compared with the paths shown in Figure 2. They are, as can be seen, very similar, as also are the squared correlation coefficients (compared with the residual effects). Now, though, we can introduce an additional variable to deal with change in the effect of origin over time. The crude division into two periods shows that there has been a move in the direction of stronger influence of origin on education, but the father-by-year of birth interaction term gives a clearer picture of what has been happening within each period. In the first period this interaction term is low and the standardised effect is small, but it is nonetheless significant. The trend that is detectable between the two periods is part of a more general trend that was going on throughout this time. The interaction term itself can be interpreted in two equivalent ways: as indicating how the regression coefficient from father changes with year of birth or how that from year of birth changes with father's score. A good way of understanding it is as the increase in the other (unstandardised) coefficients as they vary around zero (mean father's CAMSIS or 1900). So, for example, we can interpret the coefficients from father of .044 in the case of men and .045 for women as the value for those born in 1900. By 1940 the values

would be .064 and .057. Similarly, the influence from year of birth is .026 (men) and .032 (women) for fathers with the mean CAMSIS score. This converts to .020 and .028 for a score of 35 and .032 and .036 for those with a score of 59. In other words, the influence of father's position on the child's educational attainment increases over time and, equivalently, the degree to which average educational level has increased over time is greater for those from more advantaged social backgrounds. For the second period, though, the interaction term is not significant for men and is only marginally significant for women. It looks very much as if the earlier trend has, at least, come to an end, though there is no sign of it reversing direction.

Turning to the determinants of destination, shown in Table 4, we note first that our measure of education as a continuous variable again gives results that are, in terms of standardised coefficients, very close to those using SEM and, in terms of both standardised and unstandardised coefficients, comparable with those obtained using the separate educational categories. Again, also, the squared multiple correlations are unchanged. Given the similarity of these results, we can take it as legitimate to use the measure in constructing interaction terms. First, though, we can recapitulate the main findings. The key result is that the direct influence of father's social location on that of the child, net of the effects that operate through education, has declined. In the first period, each unit increase in father's CAMSIS score translates into an increase of .27 for the son; in the second it translates into only .22 additional units. In the case of daughters, it is worth noting that the decline is only slight and from a much lower early value, .16 to .15.

It is also possible, with a single measure of education, to be rather clearer about its significance. The standardised coefficients show that it is by far the most important variable in terms of variance explained, at around 25 percent for men and 30 percent for women. (Remember, also, that the father's influence on educational attainment was a little greater for daughters.) There is no change between the two periods as far as women are concerned, but there does seem to be very small increase for men. However, we are now also in a position to compare the standardised coefficients more directly, because our adjusted measure of education takes account of increased provision. In fact, they now parallel the standardised coefficients, indicating a very small increase in the case of men and no change for women.

Indeed, considering the actual values given to the educational categories indicates that, despite the adjustment for 'inflation', the returns to education have changed very little for either or women. Bearing in mind the results of the SEM analysis (Figure 2), we can reasonably conclude that the slight increase in the influence of education on destination in the

case of men, from 3.98 to 4.03, is not significant. In the case of women, the earlier analysis indicated a slight decline, whereas the results shown in Table 4 suggest no change. A safe conclusion in both cases is that there is certainly no evidence for the increased influence of education.

With the interval-level measure of education we are now in a position to supplement the basic variables with interaction terms indicating the way in which the relation between education and destination differ according to origin and the way in which the relation between origin and destination and between education and destination differ by year of birth. Looking first at the interaction between origin and education level, we can see that there is a difference between men and women. For men the direct influence of origin increases in the second period, but this reflects the fact that differences in its effect for given levels of education becomes greater. In other words, among those with higher levels of education the direct influence becomes much weaker, but amongst those with lower levels it increases. Equivalently, this can be expressed as the difference between the value of different levels of education becoming greater for those from more and less advantaged origins. Conversely, for women the direct effect from origin decreases and the differences become less marked: that is, there is less difference in the direct influence of origin for those with higher and lower levels of education and there is less difference in the effect of education for those from higher and lower origins.

Finally, in the bottom two rows of Table 4 we see the effect of introducing interaction variables involving year of birth, to cover changes over time. These suggest that, as with the determinants of education discussed in Table 1, the picture for the post-war cohorts has been one of stability: neither of the coefficients involving year of birth are significant, for either men or women. For the earlier cohorts there is a slight, but significant tendency for the direct effect of origin to decrease throughout the period. In the case of men, too, the influence of education also declines. These changes over time are consistent with the differences between the two periods.

These results, then, confirm our earlier conclusions regarding the apparent paradox of a weakening overall origin-destination relationship in combination with a strengthening origin-education relationship. Since the education-destination relationship has also increased, both links involved in the route of transmission via education have become stronger. The only way in which it is possible for the overall relationship to become weaker is for other, more direct modes of transmission to have declined at a greater rate.

At this point it is worth introducing a summary graph that illustrates these findings. In Figure 4 we show the results of basic analyses using origin, education and destination for successive 5-year birth cohorts. For clarity of presentation, the standardised (path) coefficients for the effects of origin on education, origin on destination and education on destination are plotted, for men and women separately. If the trends pre- and post-1945 are compared, we can see that, in the case of men, the pre-1944 coefficients show a steady upward trend in the effects of origin on education and education on destination and a downward trend in the (direct) effect of origin on destination. Post 1945 (ignoring, for the moment, the two most recent cohorts) the two effects on destination appear to have levelled out. Although the effect of origin on education appears from the graph to continue to rise, we saw in Table 3 that this interaction effect was not significant. It is more difficult to discern any clear pattern for women. The first three cohorts have small numbers and are best ignored. Thereafter, the general trends are similar to those for men.

Most recent cohort

The graph shown in Figure 4 indicated that, for men born since 1970 there has been a sharp decline in the effect of origin and a rise in the effect of education on destination. This matches previous findings that the overall father-son association appears to be declining for this group. However, it is not clear to what extent this represents a major change and a resumption of the long-run trend towards greater social fluidity. The oldest of the respondents concerned are only a little over thirty and there is a question as to how far, for a substantial number of them, their current occupations are a 'true' representation of their mature social location. We set a lower age limit of 25 in our analyses in order to avoid problems of this sort, but it is possible that this was too generous a figure and that it should have been set higher. The consequence of that, though, is that we would then have been able to say even less the most recent times, those in which most people are primarily interested.

Of course, a satisfactory answer to this question can only be given in the future, but we can attempt to throw a little more light on what may be happening by comparing this most recent group of young people with a similar group at a previous period, those born 25 years earlier, in 1945-1949, the first cohort of the post-war period. It is also useful to compare this earlier group of 25-30 year-olds with those of the same birth cohort interviewed after the age of 30. We cannot be sure that the most recent cohort will show the same pattern over their working lives, but this earlier evidence is the best that we have to go on. Since the number of women in this earlier group is relatively small and there are doubts about how representative they are,

the analyses are restricted to men. They use just the three basic variables and the ordinal measure of education, which means, of course, that we deal only with standardised coefficients.

Table 5, then, shows the comparable figures for 25-30 year-olds born 1970-1976 and both 25-30 year-olds and over-30s born 1945-49. The upper rows of figures are for the influence of origin on education, the lower ones for the influence of origin and education on destination. Although Table 5 shows the results from independent analyses, more formal model-fitting procedures confirm both the significance of the increased influence of origin on education and that the influence of education on destination does not differ significantly between either the younger and older respondents born 1945-49 or the 25-30 year-olds born in the earlier and later periods. That is, members of the most recent cohort do not differ from their earlier counterparts in the degree to which their education is reflected in the jobs that they are doing; nor, if the earlier pattern is repeated, will there be any strengthening in this relationship as they get older. To that extent, we can be reasonably confident that the occupations of those in their late twenties can be taken as true 'destinations' and that education has, by that stage, exercised its full effect.

The major difference between any of the three groups is in the direct influence of origin on destination, which weakens significantly for the 25-30 year-olds born in the earlier and later periods. (The difference between younger and older respondents born 1945-49 is more puzzling.) It appears, then, that the reduction in the direct origin to destination relationship that occurred for those born earlier in the twentieth century has resumed after several decades of relatively stability and, again if the earlier pattern is repeated, that this effect will weaken still further as this group ages. Indeed, the size of the reduction from earlier values is quite remarkable and explains, also, why overall mobility seems to have increased for this most recent cohort.

Income

It would be useful to be able to test the robustness of our findings by looking at a quite different measure of advantage, income. Clearly this could be done only for destination, the current position of respondents, but even then the possibilities are strictly limited. In the first place, there is an inflationary process by which income changes over time, which introduces an additional complication in making comparisons between different studies. More importantly, though, these studies have different ways of collecting information on income,

some of which are of no value for comparative analysis. For example, the British Election Studies use household income – sometimes no more than a subjective sense of their relation to an 'average', many studies code only to very broad groupings and it is not always clear whether income or earnings, or net or gross figures have been recorded.

For these reasons it is not possible to use income in anything like as thorough a way as occupation. The, very limited, best that can be done is to compare an early dataset – the Oxford Social Mobility Study, carried out in 1972 – with some more recent studies – the General Household Survey, conducted from 1990 to 1993. The former has grouped income data, but the 13 groups have been converted to their group means. The GHS has continuous data on both gross and net weekly earnings; we have used the former. In order to get round to some extent the problems arising from the fact that earnings have risen considerably between the two periods – and even within the second – we have multiplied up all values so that they have the same mean as in the most recent year.

The simplest way to consider income is to include it as an additional variable dependent on occupation. If there are any important differences in the influences on income and occupation, they will emerge as direct effects from the other factors, background and education, when occupation is controlled for. As might be expected, at both periods there are additional influences on income; in other words, factors that explain some of the variance within occupation. The most important of these is education. In the earlier study each unit of education contributed *£3.04* to weekly earnings, in the later one *£4.48* (the standardised coefficients are *.22 and .17* respectively). There is also an additional influence from father's occupation, but it is relatively minor and has declined between the two studies. Each unit of father's CAMSIS added *£0.74* to the son's earnings at the earlier date and *£0.66* at the later one (with a similar decline in the standardised coefficients from *.09 to .04*).

The evidence from income, therefore, is fully consistent with what has been found for occupation and, if anything, provides additional evidence for the declining importance of origin as a direct influence on current level of advantage. The key element, in the longer term and ignoring interactions, is that the direct influence from background has diminished.

Conclusion

Much of the debate about the role of education as a mediating factor between origin and destination has tended to assume that it is the major factor in the process and hence that whatever can be said about the changing role of education necessarily applies also to the

overall relationship between origins and destinations. In other words, if educational opportunities are seen not to have increased, then the consequence is that social fluidity has also remained unchanged; conversely, as it is more often seen, if social fluidity is seen to have increased, then this can be attributed to educational opportunities becoming more equal. However, the analyses reported above, together with previous work, show that the relations between origin, education and destination are far more complex.

Our starting point was the conclusion from earlier studies that the steady increase in social fluidity that had been taking place in Britain over a very long period was continuing through to current birth cohorts. Clearly, education would have played relatively little part for much of this time, so the question of its current role was a particularly interesting one. In fact, what is now clear is that education, far from contributing to increased social mobility, has actually served as a mechanism for social reproduction. Amongst men born after 1945 social origin, in terms of father's occupation, has a stronger effect on educational attainment than it did for those born earlier; amongst women it is unchanged. There is no evidence of education itself becoming more significant as a determinant of occupational destination. If anything, it has, amongst women, become a little less so. Ironically, it is precisely the year of a major educational reform, the provision of secondary education for all in the 1944 Education Act, that marked the end of the trend and a new situation of stability in social reproduction.

The most important development, as far as men are concerned, is that mechanisms of social reproduction other than education have become much less important, to the extent that the decline in this component has more than offset the increase in that via education. Consequently, overall social mobility has continued to slowly increase. It is worth noting, though, that for men the two components of reproduction, educational and direct, are now roughly in balance. For women, the educational route has long been more significant.

However, these relationships are complicated by the presence of interaction effects, such that the influence of education is greater for those from less advantaged backgrounds and weaker for those more advantaged. An alternative way of seeing this is that social origin is a more important influence for those with lower educational attainment and, conversely, less important for those with higher qualifications. This complex of relationships has been explained in terms of universalistic criteria being applicable to the increasing number of occupations that 'have been most selective in drawing human resources from colleges and universities' (HOUT 1988: 1381). However, it is equally, if not more, plausible to explain it in terms of the utilisation of alternative kinds of resource (GOLDTHORPE 2003; GUZZO 2002).

That is, the more advantaged tend to be more likely to enable their offspring to acquire superior levels of education. If they are successful in this respect, then their children can rely on higher educational qualifications to secure them more advantaged occupations – as, of course, can those from less advantaged backgrounds who also manage to do well via this route. However, if they are unsuccessful, they are more able to utilise those alternative resources that we have brought together as direct effects. The less advantaged, by contrast, are much more dependent on the educational route.

When looking at overall social mobility there was an indication that the long-run trend might be coming to an end in the more recent birth cohorts and it was not clear whether this was simply a 'temporary' deviation from the trend line or a completely new development. We can see now that, if the latter, then it must be a result of a tailing off of the decline in the direct influence of origin on destination. Interestingly, though, the most recent of our birth cohorts, those born in the 1970s, displays, for men, an even sharper decrease in this effect and, although it is too early to be sure, this appears to be a genuine move back towards the trend line. It is clear, though, that the downward trend in the direct route cannot continue indefinitely to more than counteract the upward trend in that via education.

Figure 1. Percentage in each educational category by 5-year birth cohort by sex.

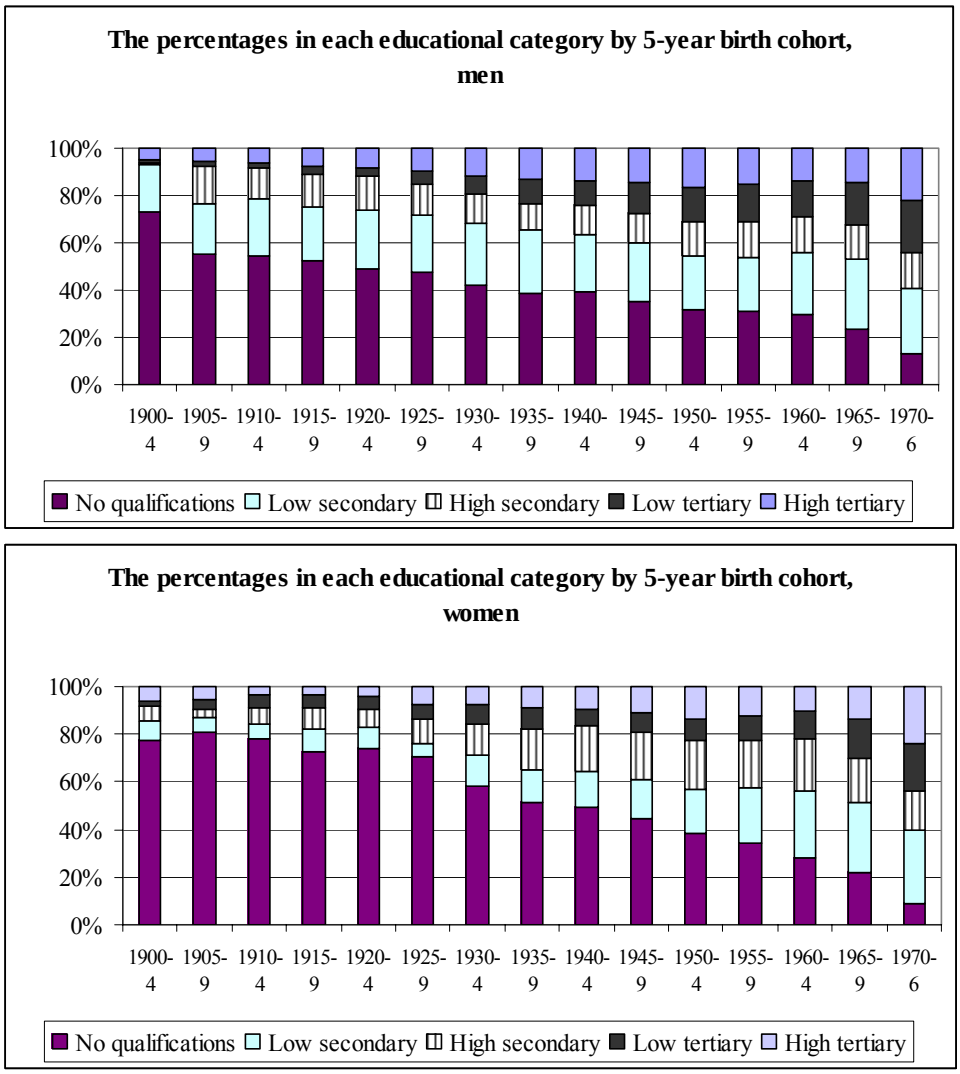


Table 1. Determinants of educational level of men and women in the periods 1888-1944 and 1945-1976, multinominal regression (reference category: no qualifications.)

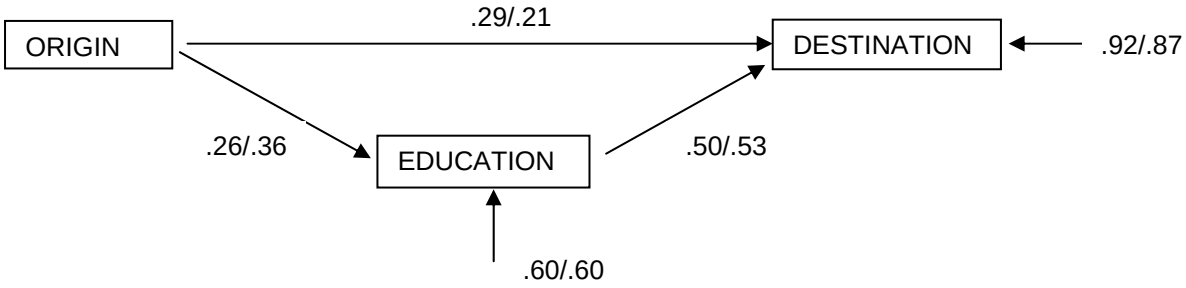
		1888-1944				1945-1979			
		M		F		M		F	
		B	Exp (B)	B	Exp (B)	B	Exp (B)	B	Exp (B)
High tertiary	Father	.063	1.07	.070	1.07	.072	1.08	.081	1.08
	Year of birth	.043	1.04	.049	1.05	.011	1.01	.045	1.05
Low tertiary	Father	.029	1.03	.048	1.05	.038	1.04	.052	1.05
	Year of birth	.063	1.07	.029	1.03	.030	1.03	.070	1.07
High secondary	Father	.017	1.02	.036	1.04	.035	1.04	.040	1.04
	Year of birth	.009	1.01	.057	1.06	.027	1.03	.035	1.04
Low secondary	Father	.005	1.01	.040	1.04	.023	1.02	.036	1.04
	Year of birth	.017	1.02	.048	1.05	.020	1.02	.068	1.07
	R-2	.12		.16		.13		.17	

†ns *5%<sig<1%

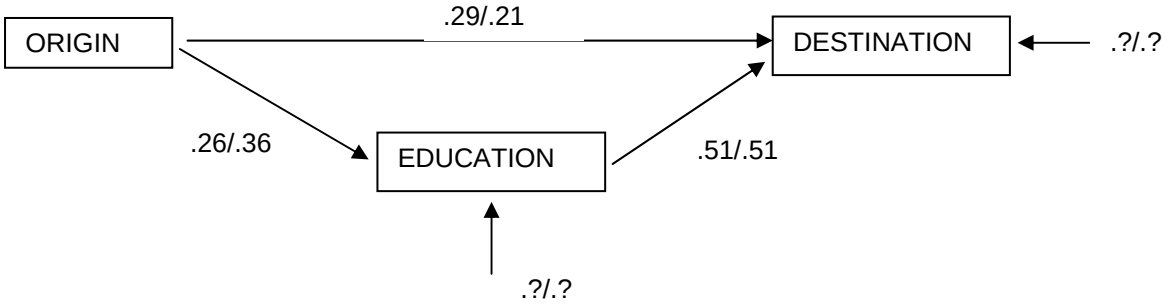
Table 2a. Determinants of CAMSIS score of men in the periods 1888-1944 and 1945-1976, linear regression								
	1888-1944				1945-1976			
	B	B	B	β	B	β	B	β
Father	.274	.26	.291	.28	.220	.22	.266	.27
Age	-.031	-.02	-.030	-.02	-.053	-.02	-.057	-.02
Low secondary	4.99	.13	5.88	.16	5.44	.15	5.17	.14
High secondary	8.81	.18	12.76	.26	9.69	.22	8.42	.19
Low tertiary	13.96	.23	19.51	.32	12.64	.29	13.69	.31
High tertiary	25.47	.49	31.59	.61	24.17	.55	24.45	.56
Year of birth	-.014†	-.01†	-.003†	-.00†	-.305	-.13	-.318	-.13
Father*low secondary			-.019†	-.02†			.019†	.01†
Father*high secondary			-.078	-.08			-.004†	-.00†
Father*low tert.			-.131	-.11			-.061	-.02
Father*high tert.			-.147	-.17			-.158	-.08
Birth y*low secondary			.010†	.00†			.011†	.00†
Birth y*high secondary			.040†	.01†			.086	.03
Birth y*low tert.			-.071*	-.01*			-.095	-.03
Birth y*high tert.			-.192	-.05			.083*	.03*
Birth y* Father			-.003	-.04			-.001†	-.01†
R-2	.39		.39		.40		.40	
†ns *5%<sig<1%								

Table 2b. Determinants of CAMSIS score of women in the periods 1888-1944 and 1945-1976, linear regression								
	1888-1944				1945-1976			
	B	β	B	β	B	β	B	β
Father	.155	.16	.192	.19	.146	.15	.190	.20
Age	-.161	-.08	-.163	-.08	-.148	-.06	-.147	-.06
Low secondary	9.131	.20	8.36	.18	8.43	.23	9.02	.24
High secondary	12.04	.28	11.45	.27	11.63	.32	10.87	.29
Low tertiary	14.68	.25	14.76	.25	15.15	.30	14.02	.28
High tertiary	28.59	.51	29.37	.52	27.17	.58	29.16	.62
Year of birth	-.111	-.06	-.103	-.06	-.27	-.11	-.256	-.11
Father*low secondary			-.021†	-.01†			-.036	-.02
Father*high secondary			-.114	-.05			-.080	-.04
Father*low tert.			-.115	-.04			-.102	-.04
Father*high tert.			-.156	-.06			-.127	-.06
Birth y*low secondary			-.678†	-.01†			-.073*	-.03*
Birth y*high secondary			-.067†	-.01†			.037†	.01†
Birth y*low tert.			.016†	.00†			.073*	.02*
Birth y*high tert.			.003†	.00†			-.121	-.04
Birth y* Father			-.002*	-.02*			.001†	.01†
R-2	.39		.40		.40		.40	
†ns *5%<sig<1%								

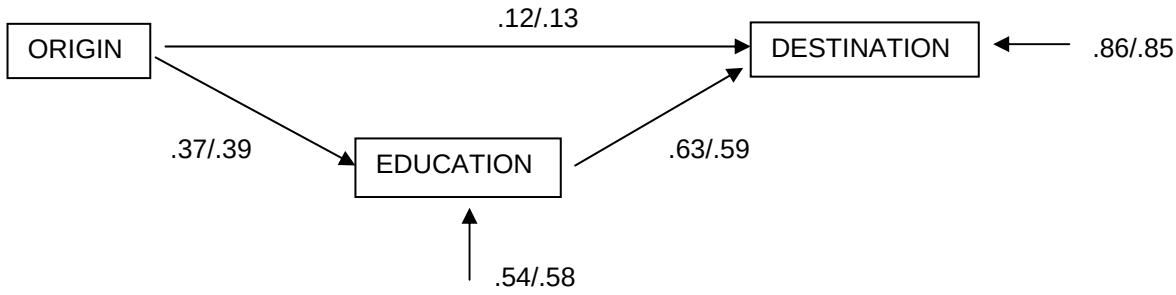
Figure 2. Path models using polyserial correlations (pre-/post-1945 paths).
(a) Men: (i) Unconstrained model



(ii) Preferred model



(b) Women: (i) Unconstrained model



(ii) Preferred model

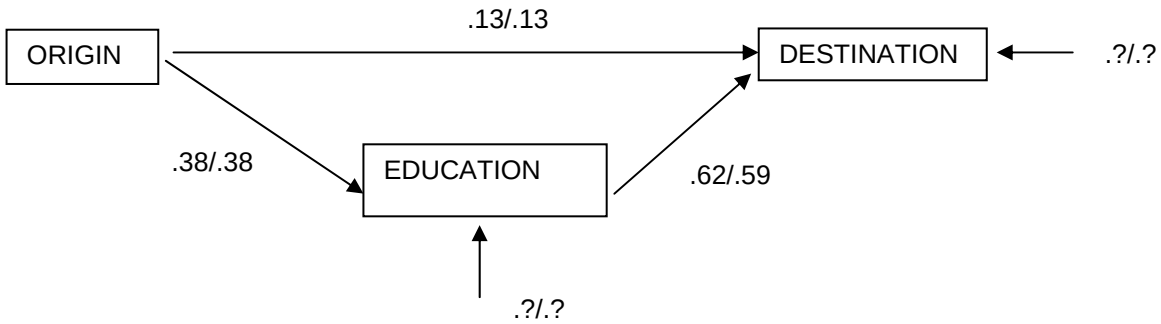
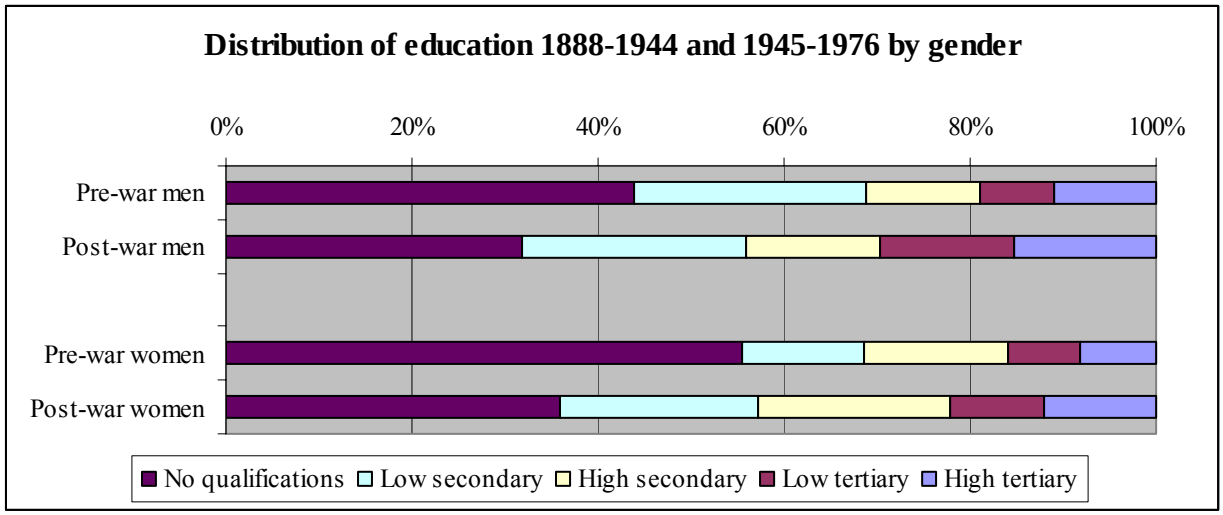


Figure 3. Distribution and adjusted scores of education for men and women in two time periods.



Values of adjusted scores of education for men and women during 2 time periods			
1888-1944		1945-1976	
M	F	M	F
9.9	9.1	10.1	9.2
6.6	6.0	7.0	6.3
5.8	5.2	6.3	5.6
4.7	4.2	5.5	4.9
3.4	3.1	3.5	2.9

Table 3. Determinants of educational level of men and women in the periods 1888-1944 and 1945-1976.

	1888-1944				1945-1976			
	M		F		M		F	
	B	β	B	β	B	β	B	β
Father	.039	.30	.043	.33	.026	.35	.047	.37
Year of birth	.026	.14	.032	.14	.044	.02	.028	.09
R-2	.11		.13		.12		.15	
Father	.044	.34	.045	.35	.043	.34	.050	.39
Year of birth	.026	.14	.032	.14	.006	.02	.028	.09
Father*year of birth	.0005	.06	.0003	.03	.000†	.01†	-.0003*	-.02*
R-2	.11		.13		.12		.15	

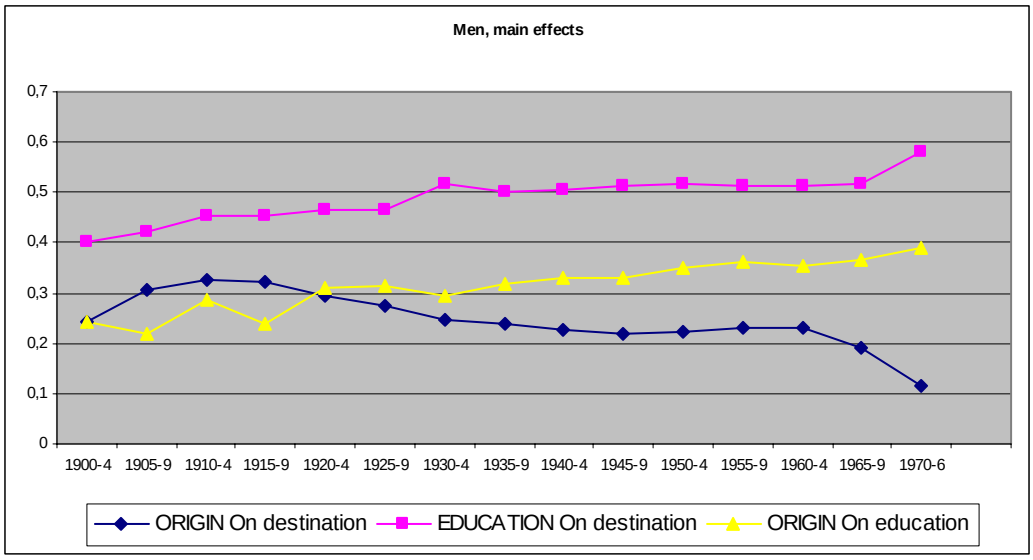
†ns *5%<sig<1%

Table 4. Determinants of destination of men and women in the periods 1888-1944 and 1945-1976.

	1888-1944				1945-1976			
	M		F		M		F	
	B	β	B	β	B	β	B	β
Father	.274	.26	.155	.16	.220	.22	.146	.15
Age	-.024*	-.01*	-.162	-.08	-.053	-.02	-.145	-.06
Education	3.98	.49	4.31	.56	4.03	.51	4.31	.56
Year of birth	-.007†	-.01†	-.110	-.06	-.301	-.12	-.270	-.11
R-2	.39		.39		.40		.40	
Father	.359	.34	.264	.27	.382	.39	.235	.24
Age	-.024*	-.01*	-.164	-.08	-.053	-.02	-.147	-.06
Education	4.83	.59	4.38	.57	4.08	.52	4.50	.59
Year of birth	.090	.06	-.109	-.06	-.343	-.14	-.225	-.09
Father*education	-.023	-.13	-.023	-.14	-.029	-.17	-.019	-.11
Father*year of birth	-.003	-.05	-.002	-.02	-.001†	-.01†	.001†	.01†
Education*year of birth	-.021	-.12	-.002†	-.005†	.008†	.02†	-.010†	-.03†
R-2	.39		.40		.40		.40	

†ns *5%<sig<1%

Figure 4. Main effects by five-year birth cohort (standardised coefficients).



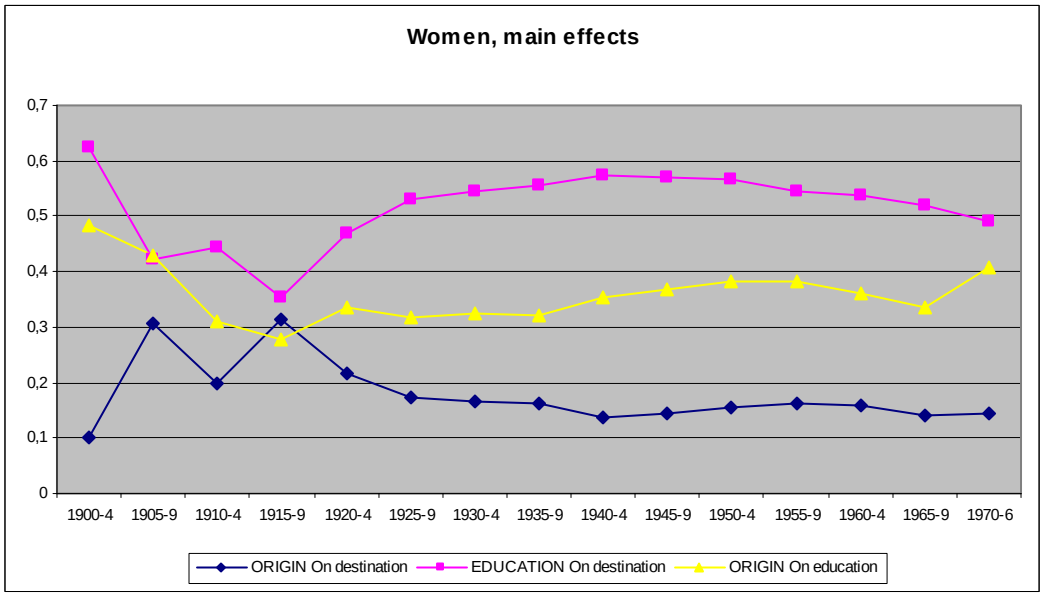


Table 5. Educational and occupational attainment of men aged 25-30 (standardised coefficients, polyserial correlations).			
	Born 1945-1949		Born 1970-1976
	25-30-y-old	Over 30	25-30-y-old
Education			
Father	.30	.35	.36
R-2	.09	.12	.13
Occupation			
Father	.26	.20	.12
Education	.53	.53	.56
R-2	.44	.40	.37

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[1] Full details are given in the previous article (Prandy et al.).