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Decomposing 'social origins': The effects of parents' class, status and educational on the educational attainment of their children

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Abstract

Divergent findings on trends in inequalities in educational attainment associated with individuals' social origins have led to much discussion of how far these reflect real differences by place and time or, rather, differences in research procedures. But in this latter regard one issue has received relatively little attention: i.e. that of the conceptualisation and measurement of social origins. We propose decomposing social origins into parental class, parental status and parental education. Following this approach, we analyse data from three British birth cohort studies. We show that these three components of social origins have independent and distinctive effects on educational attainment, and ones that persist or change in differing ways across the cohorts. We also make some assessment of their combined effects. We consider the methodological implications of our findings, in particular for analyses of trends in educational inequalities, and, further, how they might result from other, independently established, changes in social stratification in Britain over the historical period covered.

Introduction

The effects of individuals' social origins on their educational attainment have been extensively investigated by sociologists and other social scientists. That such effects are important is unquestioned. However, this is still an area of research in which a good deal of uncertainty and indeed controversy exists, and in particular concerning trends over time. Do inequalities in educational attainment associated with social origins show a long-run stability or merely trendless fluctuation or, rather, a secular tendency to decrease? While the divergent findings that are reported in this regard may of course reflect real differences across national societies or time periods, a good deal of attention has been given to the possibility that they may also reflect differences in conceptualisation and methodology. For example, researchers differ over whether they define and model educational attainment in terms of various transitions that individuals make in the course of their educational careers or in terms of the highest level of education that they eventually achieve. And further, difficult questions arise over how far classifications of levels of educational attainment can be taken to hold their validity over the quite lengthy historical periods that may need to be studied if any trends in inequalities associated with social origins are to be identified.

While we would not seek to downplay the importance of these concerns, we wish in the present paper to raise a further issue that has so far received remarkably little attention but which, we believe, could be yet more consequential: that is, the issue of the conceptualisation and measurement of social origins. In the next section of the paper, we present our understanding of the problems that need to be addressed in this regard, and indicate the general approach that we would wish to take in dealing with them. In subsequent sections, we apply this approach in analyses of the effects of social origins on the educational attainment of members of successive British birth cohorts.

The conceptualisation and measurement of social origins

In early research into the effects of children's social origins on their educational attainment, social origins were treated in a variety of ways, although most often on the basis of parents' score or ranking on some occupational prestige or 'socioeconomic' status scale (see e.g. Shavit and Blossfeld eds, 1993). Parents' educational level was also often included as an additional social origins variable - a practice that has since been widely, though not invariably, followed. However, a notable shift in more recent research is that parents' social class position has tended to replace parents' occupational prestige or socioeconomic status as the principal indicator of social origins, with versions of the EGP (or CASMIN) class schema (Erikson, Goldthorpe and Portocarero, 1979; Erikson and Goldthorpe, 1992) being widely used for this purpose (see e.g. Breen *et al.*, 2009, 2010). Such a focus on parental class may in some cases be appropriate - as we have in fact supposed in recent work of our own (Bukodi and Goldthorpe, 2010). But little explicit discussion has taken place of the theoretical grounds for treating social origins in one way rather than another. It is difficult to

avoid the conclusion that some notion of the 'interchangeability of indicators' (Lazarsfeld, 1939) has prevailed: or, in other words, that it has been assumed, if only implicitly, that however social origins are measured, it will make rather little difference in determining the extent of, or changes in, associated inequalities in educational attainment.

In this context, it is then to be welcomed that some authors have begun to query present practices and to show an interest in improving on them. Most notably for our present purposes, Jaeger (2007) has argued that the inadequate conceptualisation and measurement of social origins is indeed a further likely source of divergent results regarding trends in educational inequalities. Specifically, Jaeger is concerned with the tendency for parental class to be in effect *equated with* social origins. He argues that when used in this way class, as operationalized through, say, the EGP schema, serves essentially as a 'proxy variable' for a wide range of other, quite heterogeneous factors, all of which may have some influence - and possibly changing influence - on children's educational attainment. He therefore proposes that in research into educational inequalities where parental class is taken to index social origins, further variables should be included of a more detailed kind that aim to capture not only family economic resources or 'capital' but also, following Bourdieu (1984), family cultural capital and family social capital. In this way, Jaeger believes -and seeks to show through analyses of Danish data - that 'raw' class effects on educational attainment can, at least to some extent, be decomposed into a number of more clearly defined effects, which could then remain stable or change or, perhaps, change in different directions.

While we appreciate the motivation of Jaeger's work, we differ from him on several major points, and would thus take up a significantly different approach to the treatment of social origins.

First of all, we would note that the EGP or similar class schemata are not intended to serve as proxy variables in the way Jaeger believes they do, and that they certainly do not do so 'by definition', as he claims (2007: 528). Rather, they are explicitly designed to make operational a conceptualisation of class in terms of social relations in labour markets and production units: or, that is, to determine class positions in terms of differences in employment relations. In this respect, both their criterion and construct validity have been extensively, and in general successfully, tested (see Goldthorpe, 2007, vol. 2, ch. 5; McGovern *et al.*, 2008; Rose and Harrison, eds., 2010). Furthermore, class, thus understood, can be shown to be associated with economic advantage and disadvantage not only as regards individuals' income levels but, further, as regards their *income security*, their short-term *income stability* and their longer-term *income prospects* (Goldthorpe and McKnight, 2006; Chan and Goldthorpe, 2007b). We would therefore maintain that parental economic resources, and especially as they might be used to support children's education, are well captured through such a concept of class.

Correspondingly, while we would agree that if class serves as the only indicator of social origins, it is likely to 'pick up' the effects of different but associated factors also influencing individuals' educational attainment, we would not see as the solution to this problem the *ad hoc* 'decomposition' of class. We would rather *complement* the concept of class, understood

in the way indicated above, with a further concept, at a similar level of generality, intended to capture the socio-cultural, as distinct from the economic, aspects of stratification. The obvious candidate here is the concept of social status, understood in a Weberian sense: that is, as referring to a qualitatively different form of stratification to class, grounded in relations of perceived social superiority, equality and inferiority, and expressed in patterns of inclusion in, and exclusion from, more intimate kinds of association and distinctive life-styles (Chan and Goldthorpe, 2004, 2007a,b; Chan ed., 2010). Status in this sense could then be taken to index family sociocultural resources in terms of parents' social contacts and networks and their cultural tastes and forms of sociocultural participation.

Finally, and following on from the idea that what needs to be 'decomposed' is the concept of social origins rather than that of class, we would argue that where the dependent variable is educational attainment, the practice of including parental education as a further component of social origins is obviously appropriate. However, if parental status is also included in the analysis along with parental class, we would then wish to interpret parental education in a more specific way than do Jaeger and others working under the influence of Bourdieu. We would take parental education as indexing what might be described as 'educational resources': that is, parents' capacity to participate directly in furthering their children's educational careers as, say, by creating a supportive home learning environment and, further, by using their own knowledge of the educational system to provide informed guidance concerning choice of schools, subjects to study, courses and examinations to take etc.

Research questions, data and variables

Against the background provided by the foregoing, our general aim in this paper is to see what advantages may be gained in analyses of inequalities in educational attainment if we consider social origins in terms of the three variables of parental class, parental status and parental education. What ultimately is needed is of course to hypothesise and test actual social processes or mechanisms that underlie the associations that can be shown to exist between social origins and educational attainment. But a prior requirement is to establish just what these associations are as fully and as accurately as possible. Otherwise, attempts at specifying generative processes may well be premature and misguided. In other words, we need well-defined and well-grounded *explananda* before proceeding to causal explanations. The analyses we present are therefore essentially descriptive ones directed to this end. However, in the concluding section of the paper, we note how our results do point to the potential causal importance of several quite different social processes already shown to be in operation in modern British society by independent research, and thus suggest that it is on the further investigation of these linkages that future research could best focus.[1]

Our first research question is then the following:

(i) Can parental class, status and education be shown to have separate, independent effects on individuals' levels of educational attainment?

If this question can be answered positively - as we show is in fact the case - two further questions, or sets of questions, can be posed:

(ii) How far do these independent effects of parental class, status and education tend to stay constant over time or to show similar or different directions of change?

(iii) What are the combined effects of these three separate parental variables on individuals' levels of educational attainment, what can be said about their relative importance, as we have measured them, and what changes in these respects are apparent over time?

As the basis for addressing these research questions, we take the data-sets of the three earliest British birth cohort studies: the Medical Research Council Survey of Health and Development (NSHD), the National Child Development Study (NCDS) and the British Cohort Study (BCS), which aim to follow through their life-courses children born in Britain in one week in 1946, 1958 and 1970, respectively. However, in the case of women, we can work with only the two later cohorts. Those women in the 1946 cohort who achieved higher secondary or tertiary education were too few in number - less than 10% of the total - and too highly selected to allow for the kinds of data analysis that we wish to undertake: problems of multicollinearity in our explanatory variables arise. In each cohort we restrict our attention to cohort members on whom we have complete information on all of the variables discussed below.

As the dependent variable of our analyses, we take individuals' 'completed' educational attainment: i.e. their *highest educational qualification at age 34*. This we measure according to a new classification that we have developed for the British case with eight ordered categories ranging from 'no qualifications' to 'higher degree'. For our present purposes, however, we collapse the 'higher degree' and 'degree' categories. Table 1 gives details of the classification and shows the corresponding distributions of members of the 1946, 1958 and 1970 birth cohorts.

Table 1: The educational scale and percentage distributions of cohort members by highest level of qualification attained by age 34

	1946 cohort		1958 cohort		1970 cohort	
Level of qualification	Men	Women	Men	Women	Men	Women
1. No qualifications	33.4		15.6	18.1	15.8	14.0
2. Below O-level, NVQ 1 [Sub-secondary]	4.7		15.4	16.0	11.4	15.0
3. 1-4 O-level passes, NVQ2 [Secondary - low performance]	20.0		21.2	22.6	21.7	22.4
4. 5+O-level passes or 1 A-level pass, NVQ 3 [Secondary – high performance]	17.3		19.5	16.4	17.2	16.4
5. 2+ A-level passes [Higher secondary]	1.5		3.7	3.4	3.1	3.5
6. Tertiary sub-degree qualification, NVQ 4 [Lower tertiary]	14.5		12.2	14.2	13.5	11.7
7. Degree, NVQ5 or 6, higher degree [Higher tertiary]	8.6		12.4	9.3	17.8	17.5
Total	100		100	100	100	100
N	2060		4674	4504	5195	5369

The independent variables that we introduce, in addition to cohort, are our three social origin variables treated as follows.

Parental class. We use the 7-class 'analytical' version of the National Statistics Socio-economic Classification (NS-SeC) which can be regarded as a new and improved instantiation of the Goldthorpe class schema for Britain (ONS, 2005a,b; Goldthorpe, 2007 vol. 2, ch. 5). We code cohort members' parents to NS-SeC on the basis of their employment status and their 3-digit occupational unit-group according to the OPCS SOC90 classification (ONS, 2005b, Table 17). In cases where cohort members were living with two employed parents who could be so coded - at age 10 for the 1946 and 1970 cohorts and at age 11 for the 1958 cohort - we apply the 'dominance' method (Erikson, 1984) to arrive at a single parental class coding.[2] Since NS-SeC is not regarded as a fully ordered classification, the parental class categories are treated as nominal, except in our last set of analyses.

Parental status. We use the status scale proposed by Chan and Goldthorpe (2004), which is derived from the occupational structure of close friendship relations. Cohort members' parents are coded to the 31 categories of the scale on the basis of the same allocation to SOC90 occupational unit-groups as in the case of class, and the status scores of the 31 categories are converted into percentile form. Where both parents are employed and can be allocated to the scale, parental status is determined by the higher ranking of the two.

Parental education. The data available on cohort members' parents' education is less detailed

than that available on their own education, so we are unable to use the scale shown in Table 1. Instead, we use seven ordered categories which take account of the level of both parents' educational qualifications - when their children were aged 10 in the case of the 1946 and 1970 cohorts and aged 11 in the case of the 1958 cohort. The categories range from the lowest in which neither parent has any qualification to the highest in which both parents have degree-level qualifications. When education is an explanatory variable, and especially in analyses extending over a period of time in which the distribution of education has changed substantially, we believe it preferable to treat education in *relative* rather than absolute terms. We therefore score each level of parental education for each cohort according to the percentage of parents *falling below that level* in the cumulative percentage distribution for the cohort.

Full details of the parental class, status and education variables are provided in an Appendix.

Results – 1

Our first research question is that of whether parental class, status and education have independent effects on children's educational attainment. To address this question, we apply a series of binary logit models. In Tables 2 and 3, we show on this basis, for men and women - i.e. sons and daughters - respectively, the effects of our three parental variables on their chances of exceeding rather than failing to exceed each of the six successive 'thresholds' implied by our seven-level educational qualifications scale (Table 1). Thus, at the first threshold, the effects relate to the chances of children having some qualification rather than none, while at the final threshold they relate to the chances of their having a degree or equivalent rather than some lower level of qualification or none. We investigated the possibility of using ordered logit models, which would constrain the effects of the parental variables to be constant across the thresholds, but found that the 'proportional odds' or 'parallel regression' assumption required by these models could not be met. Given our descriptive purposes in this paper, we present the regression coefficients in terms of average marginal effects, although we would note that an odds ratio interpretation would in fact lead us to reach essentially the same substantive conclusions.

What the content of Tables 2 and 3 most obviously enable us to say - and in direct response to our first research question - is that when parental class, status and education are considered together, each does in fact have an independent effect on children's educational attainment. In other words, these three variables *cannot* be regarded as essentially interchangeable indicators of social origins.

Looking at the results in more detail, one may note that while parental status and parental education have a significant effect at each qualification threshold, parental class effects, while fairly regular for women, are less so for men. In the case of women, it can be seen that the daughters of parents in Classes 1 and 2, the professional and managerial salariat, do best at all qualifications thresholds, while those of parents in Classes 6 and 7, which can be equated

with the working class, tend to do worst, with those of parents in Classes 3, 4 and 5 usually falling in intermediate positions. In the case men, however, there is a deviation from this pattern. The sons of parents in Class 4, the 'petty bourgeoisie' of small employers and self-employed workers, tend to do better than the sons of working class parents only at the third, fourth and sixth qualifications thresholds - i.e. those where the attainment of a higher *academic* qualification is typically implied. This result is in fact encouraging in suggesting that specifically class effects are here being identified. Previous research has indicated that where from an early stage the expectation is that a son will take over a family business or trade rather than aiming for salaried employment, less emphasis is likely to be placed on his educational attainment; while, in contrast, with daughters of the petty bourgeoisie who less often 'inherit', education is seen as generally more important in improving their chances in both labour and marriage markets (Erikson and Goldthorpe, 1992: 259-60; Ishida, Müller and Ridge, 1995).[3]

Given our finding that parental class, status and education all have independent effects on children's educational attainment, two conclusions follow. First, where attention is focused on only one of these components of social origins, say, parental class, its effects will be overestimated because of the confounding that will occur with what should rather be understood as the effects of parental status or education. Second, the neglect of any one of these components of social origins will lead to an underestimation of the full extent to which educational inequalities are associated with social origins.

In this connection, it is of some further interest to note that for the 1970 cohort we can also include in our analyses a reliable family income variable (as at child's age 10) - although with a 40% reduction in the cohort N because of missing data.[4] We find that level of family income does itself have an independent - positive - effect on children's educational attainment: that is, over and above those of income security, stability and prospects that we would see as being captured by class. However, this effect appears rather slight and it produces little change in the pattern of parental class, status and education effects that we have reported (detailed results are available on request). Thus, while our omission of a family income variable in our main analyses means that we will ourselves be underestimating total social origin effects to some extent, it has at the same time to be observed that this underestimation will be substantially greater where economists - as appears often to be the case - treat social inequalities in educational attainment in terms of family income alone.

Table 2: Main effects of cohort and of parental class, status and education on highest qualification attained by age 34, men, binary logit models, average marginal effects

	Qualification thresholds											
	1 vs 2-8		1-2 vs 3-8		1-3 vs 4-8		1-4 vs 5-8		1-5 vs 6-8		1-6 vs 7-8	
Cohort												
1946 cohort	-0.073	**	-0.005		0.008		0.013		0.030	**	-0.021	**
1958 cohort (ref.)												
1970 cohort	-0.030	**	0.037	*	0.020	*	0.041	*	0.048	**	0.033	**
Parental class												
7 routine occupations (ref.)												
6 semi-routine occupations	0.008		-0.003		-0.002		0.008		0.007		0.026	*
5 lower supervisory and technical occupations	0.068	**	0.076	**	0.087	**	0.060	**	0.052	**	0.024	*
4 small employers and own account workers	-0.002		-0.002		0.036	*	0.038	*	0.029		0.046	**
3 intermediate occupations	0.065	**	0.081	**	0.108	**	0.101	**	0.087	**	0.070	**
2 lower managerial and professional occupations	0.032		0.046	*	0.113	**	0.083	**	0.074	**	0.068	**
1 higher managerial and professional occupations	0.022		0.056	*	0.152	**	0.132	**	0.117	**	0.095	**
Parental status												
score	0.212	**	0.228	**	0.178	**	0.163	**	0.145	**	0.086	**
Parental relative education												
level	0.186	**	0.221	**	0.273	**	0.249	**	0.229	**	0.190	**

*$p < 0.05$; **$p < 0.01$

Table 3: Main effects of cohort and of parental class, status and education on highest qualification attained by age 34, women, binary logit models, average marginal effects

	Qualification thresholds											
	1 vs 2-8		1-2 vs 3-8		1-3 vs 4-8		1-4 vs 5-8		1-5 vs 6-8		1-6 vs 7-8	
Cohort												
1958 cohort (ref.)												
1970 cohort	0.007		0.021	*	0.016	**	0.016	**	0.017	**	0.034	**
Parental class												
7 routine occupations (ref.)												
6 semi-routine occupations	0.020	*	0.006		0.005		0.015		0.001		0.000	
5 lower supervisory and technical occupations	0.045	**	0.047	**	0.028	*	0.007		0.006		0.003	
4 small employers and own account workers	0.049	**	0.053	**	0.092	**	0.067	**	0.054	**	0.031	*
3 intermediate occupations	0.051	**	0.083	**	0.086	**	0.055	**	0.036	**	0.030	*
2 lower managerial and professional occupations	0.060	**	0.108	**	0.156	**	0.116	**	0.094	**	0.058	**
1 higher managerial and professional occupations	0.063	**	0.106	**	0.201	**	0.174	**	0.150	**	0.095	**
Parental status												
score	0.181	**	0.184	**	0.140	**	0.125	**	0.122	**	0.082	**
Parental relative education												
level	0.118	**	0.188	**	0.261	**	0.243	**	0.217	**	0.189	**

*$p < 0.05$; **$p < 0.01$

Results – 2

We now turn to our second research question, that of how far the effects on children's educational attainment of their parents' class, status and education are constant over time or may change in similar or in different directions. To deal with this question, we apply the same series of logit models as before but now introduce interaction terms between cohort and parental class, status and education, respectively.[5] The results for men, with three cohorts, are shown in Table 4 and for women, with two cohorts, in Table 5.

As regards, first, parental class effects, a few significant interactions show up that would suggest, if anything, some weakening of the advantages of Class 1 sons at intermediate qualifications thresholds as between the 1958 and 1970 cohorts. However, considering the results overall, it would be difficult to see class effects as being other than essentially constant, for men and women alike.

In contrast, as regards parental status effects, it can be seen from Table 4 that while in the case of sons no significant decline is found between the 1946 and 1958 cohorts, such a decline does show up quite consistently between the 1958 and 1970 cohorts - that is, at each qualification threshold. And Table 5 reveals a similarly consistent decline in the case of daughters.

Finally, in turning to the effects of parents' educational level, a different situation again is revealed. In the case of sons, Table 4 shows some weakening of the effects of parental education between the 1946 and 1958 cohorts at the lower and intermediate qualifications thresholds but then a strengthening of these effects between the 1958 and 1970 cohorts at the intermediate and higher thresholds. And in the case of daughters, parental education effects increase between the 1958 and 1970 cohorts at all thresholds alike.

We would not take these results as providing any conclusive evidence of long-term trends within the British population - even with the three birth cohorts of men only a twenty-four year period is covered - although, as we discuss further in our concluding section, they are on lines that might be expected in the light of other independently established tendencies in British society. What we would regard as the main importance of the findings presented in Tables 4 and 5 is the answer they provide to our second research question: that is, that the effects of parents' class, status and education on their children's educational attainment may display greater or less constancy over time, and, further, that where these effects change, *it cannot be supposed that this will necessarily be in the same direction*. If, then, the primary concern of research is with persistence or change in the overall effects of individuals' social origins on their educational attainment, it is possible that misleading conclusions may be reached as a result of social origins not being conceptualised and measured in a sufficiently comprehensive and differentiated way. For example, in the further analyses referred to in note 3 where we index social origins only by parental class, we do in fact find evidence of declining effects broadly consistent, for the period covered, with those reported by Breen *et al.* (2009, 2010); but, as we have seen, when parental status and education are also considered declining class effects are scarcely apparent.

Table 4: Cohort by parental class, status and education interaction effects on highest qualification attained by age 34, men, a binary logit models, average marginal effects

	Qualification thresholds					
	1 vs 2-8	1-2 vs 3-8	1-3 vs 4-8	1-4 vs 5-8	1-5 vs 6-8	1-6 vs 7-8
Cohort						
1946 cohort	-0.057 **	0.014	0.018	0.021 *	0.037 **	-0.016 *
1958 cohort (ref.)						
1970 cohort	-0.011	0.051 **	0.031 **	0.051 **	0.058 **	0.041 **
Parental class						
7 routine occupations (ref.)						
6 semi-routine occupations	0.008	-0.003	-0.002	0.011	0.012	0.025
5 lower supervisory and technical occupations	0.065 **	0.075 **	0.088 **	0.061 **	0.053 *	0.018
4 small employers and own account workers	-0.016	-0.013	0.027	0.023	0.014	0.029 **
3 intermediate occupations	0.042 *	0.062 **	0.097 **	0.085 **	0.073 **	0.061 **
2 lower managerial and professional occupations	0.018	0.025	0.106 **	0.073 **	0.065 **	0.067 **
1 higher managerial and professional occupations	0.051 *	0.091 **	0.180 **	0.138 **	0.118 **	0.107 **
*Parental class * 1946 cohort*						
6 semi-routine occupations	-0.022	0.001	-0.003	-0.016	-0.029	-0.064
5 lower supervisory and technical occupations	0.032	0.009	0.068	0.071	0.059	0.007
4 small employers and own account workers	-0.044	-0.113	-0.050	0.013	0.031	0.048
3 intermediate occupations	-0.034	-0.069	0.021	-0.037	-0.030	0.013
2 lower managerial and professional occupations	-0.104	-0.101	-0.044	-0.041	-0.034	0.014
1 higher managerial and professional occupations	-0.022	-0.087	-0.002	-0.061	-0.064	-0.015

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*Parental class * 1970 cohort*												
6 semi-routine occupations	-0.030		-0.019		-0.007		-0.002		0.006		0.032	
5 lower supervisory and technical occupations	-0.032		-0.055		-0.068		-0.045		-0.043		0.005	
4 small employers and own account workers	-0.031		-0.073		-0.052		-0.001		0.001		0.001	
3 intermediate occupations	-0.031		-0.012		-0.048		-0.029		-0.033		-0.029	
2 lower managerial and professional occupations	-0.048		-0.122	*	-0.024		-0.025		-0.014		-0.009	
1 higher managerial and professional occupations	-0.013		-0.104	*	-0.116	*	-0.042		-0.023		-0.021	
Parental status												
score	0.225	**	0.244	**	0.184	**	0.176	**	0.158	**	0.082	**
*Parental status * 1946 cohort*												
score	0.061		0.106		-0.085		-0.031		0.027		-0.016	
*Parental status * 1970 cohort*												
score	-0.307	**	-0.302	**	-0.183	**	-0.156	**	-0.141	**	-0.075	**
Parental relative education												
level	0.173	**	0.210	**	0.269	**	0.250	**	0.230	**	0.190	**
*Parental relative education * 1946 cohort*												
level	0.166	**	0.131	**	0.104	**	0.068	*	0.042		0.036	
*Parental relative education * 1970 cohort*												
level	0.052		0.055		0.086	**	0.101	**	0.110	**	0.125	**

*$p < 0.05$; **$p < 0.01$

Table 5: Cohort by parental class, status and education interaction effects on highest qualification attained by age 34, women, binary logit models, average marginal effects

	Qualification thresholds											
	1 vs 2-8		1-2 vs 3-8		1-3 vs 4-8		1-4 vs 5-8		1-5 vs 6-8		1-6 vs 7-8	
Cohort												
1958 cohort (ref.)												
1970 cohort	-0.001		0.040	**	0.028	**	0.030	**	0.031	**	0.065	**
Parental class												
7 routine occupations (ref.)												
6 semi-routine occupations	0.031	*	0.019		0.016		0.021		0.008		0.004	
5 lower supervisory and technical occupations	0.051	**	0.056	**	0.032	*	0.008		0.007		0.003	
4 small employers and own account workers	0.053	**	0.059	**	0.090	**	0.056	**	0.045	*	0.024	
3 intermediate occupations	0.054	**	0.078	**	0.087	**	0.054	**	0.037	*	0.029	*
2 lower managerial and professional occupations	0.066	**	0.113	**	0.165	**	0.121	**	0.096	**	0.055	**
1 higher managerial and professional occupations	0.096	**	0.141	**	0.248	**	0.204	**	0.169	**	0.104	**
*Parental class * 1970 cohort*												
6 semi-routine occupations	-0.028		-0.021		0.039		0.003		0.019		0.031	
5 lower supervisory and technical occupations	-0.047		-0.053		-0.053		-0.019		-0.015		-0.026	
4 small employers and own account workers	-0.055		-0.069		-0.026		0.027		0.004		0.005	
3 intermediate occupations	-0.015		-0.031		0.010		0.012		0.021		0.019	
2 lower managerial and professional occupations	-0.046		-0.053		-0.071		-0.076		-0.083		-0.025	
1 higher managerial and professional occupations	-0.060		-0.080		-0.185	*	-0.102		-0.070		-0.013	
Parental status												
score	0.192	**	0.196	**	0.153	**	0.140	**	0.141	**	0.098	**
*Parental status * 1970 cohort*												
score	-0.292	**	-0.320	**	-0.227	**	-0.159	**	-0.170	**	-0.088	**
Parental relative education												
level	0.117	**	0.188	**	0.260	**	0.243	**	0.218	**	0.189	**
*Parental relative education * 1970 cohort*												
level	0.110	**	0.099	**	0.158	**	0.164	**	0.181	**	0.189	**

*$p < 0.05$; **$p < 0.01$

Results – 3

Our third research question - regarding the combined effects of parents' class, status and education and their relative importance - is a complex one that we can treat here in only a limited way. To begin with, we simplify the possible combinations of our three parental variables by reducing each of these to four levels. With parental class, we collapse the seven NS-SeC classes to four: i.e. 1, 2, 3-5 and 6-7; and with parental status, we use the four broad status bands that Chan and Goldthorpe (2004: 389-91) distinguish within their scale. For the purposes of our analysis, we then score these class and status levels from 1 (Classes 6-7 and lowest status band) to 4 (Class 1 and highest status band). In the case of parental education, we use relative scores for a fourfold collapse of the seven original categories (see Appendix). Further, as regards children's educational attainment, we focus our attention just one of the six thresholds previously considered: i.e. on the fourth threshold which makes the division between those obtaining a higher secondary or tertiary qualification as opposed to some lower level of qualification.[6]

We then take this division as forming the dependent variable in a binary logistic regression model with our four-level measures of parental class, status and education being the independent variables, and with interaction terms included between cohort and the three parental variables and also between parental class and parental status and between parental class and education.[7] We apply this model separately to men in the 1946, 1958 and 1970 cohorts and to women in the 1958 and 1970 cohorts. From the results we obtain, we calculate the probabilities of obtaining a higher level qualification for children of ten different types of 'hypothetical parents' (HPs), defined in terms of their *combinations* of levels of class, status and education. The ten types are selected on the basis of theoretical interest as well as numerical importance. Details are given in Table 6. As can be seen, Types 1 to 4 have what might be thought of as 'consistent' class, status and educational profiles, while Types 5-7 are in different respects 'inconsistent' in relation to Type 1, and Types 8-10 in relation to Type 4.

Table 6: Types of hypothetical parents

	Parental			Illustrative cases	%		
Type	Class	Status	Education		1946	1958	1970
1	4	4	4	Father: solicitor; mother: schoolteacher; both have degree-level qualifications	1.5	1.7	5.1
2	3	3	3	Father: store manager; mother: theatre nurse; both have higher secondary qualifications	1.3	2.0	1.9
3	2	2	2	Father: dispatch clerk; mother: hair-dresser; both have lower secondary qualifications	0.7	3.2	9.4
4	1	1	1	Father: factory machinist; mother: laundry worker; neither has qualifications	34.4	10.2	7.3
5	1 − 3	4	4	Father: parks manager; mother: part-time social worker, with degree-level qualification	1.5	2.0	3.6
6	4	1 − 3	4	Father: works manager; mother: not employed but has degree	0.2	0.3	0.7
7	4	4	1 − 3	Father: sales manager; mother: not employed; both have lower secondary qualifications	1.5	2.5	4.7
8	2 − 4	1	1	Father: self-employed painter and decorator; mother: not employed; neither has qualifications	12.2	9.8	3.9
9	1	2 − 4	1	Father: school caretaker; mother: part-time sales assistant; neither has qualifications	3.5	5.4	7.6
10	1	1	2 − 4	Father: gardener; mother: not employed; has lower secondary qualifications	12.2	6.8	5.4

Note: 4 = highest level, 1 = lowest level

The results of the analyses carried out on this basis are shown for men in Figure 1 and for women in Figure 2. The probabilities of children of the consistent types of HPs gaining rather than not gaining a higher level qualification give an indication of the overall extent to which social origins are associated with inequalities in this regard. Comparing the extremes, and taking the cohorts together, both the sons and daughters of Type 4 HPs have less than a 20% chance of becoming what might be regarded as 'well-qualified', while the sons of Type 1 HPs have 60-70% chance and the daughters a 70-80% chance. Looking across the cohorts, no reduction in these disparities is evident for women and barely so for men.

The first set of inconsistent HPs, Types 5-7, are intended to reveal the effects of otherwise advantaged parents being relatively disadvantaged in one respect - i.e. in their class or status or education. It can be seen that relatively low parental status (Type 6) has little influence on the educational chances of either sons or daughters while the effect of a relatively low class position (Type 5) is damaging for daughters but scarcely for sons. However, it is with relatively low parental education (Type 7) that the most negative effect on children's educational chances is revealed, and especially in the 1970 cohort in which these children do no better than those of Type 2 parents.

The second set of inconsistent HPs, Types 8-10, then serve to show, conversely, the effects of otherwise disadvantaged parents being relatively advantaged in the case of their class, status or education. With the 1946 and 1958 cohorts, it can be seen that the chances of children of HPs of these types achieving a higher level qualification differ rather little from those of children of Type 4 HPs - i.e. they remain in the region of only 10-20%. However, in the case of the 1970 cohort children with at least one parent with at least some secondary qualifications (Type 10) do have significantly improved chances of obtaining a higher secondary or tertiary qualification, at around the 30% mark.

The foregoing analyses would then lead us to make the following three points. First, when the combined effects of parental class, status and education are considered, it is evident that wider inequalities will be revealed than when social origins are treated in a more limited away, as, say, simply in terms of parental class. It is true that the groups represented by our more extreme HP types represent relatively small minorities - but still ones that, taken together, are far from negligible. Second, the extreme inequalities in question appear to be persistent, although the numbers of the most disadvantaged parents are declining. And third, there are clear indications that, as we here conceptualise and measure the three components of social origins, it is parental education that is of greatest, and increasing, relative importance.

Figure 1: Probability of attaining higher secondary or tertiary level qualifications by cohort and type of hypothetical parents, with 95% confidence intervals, men

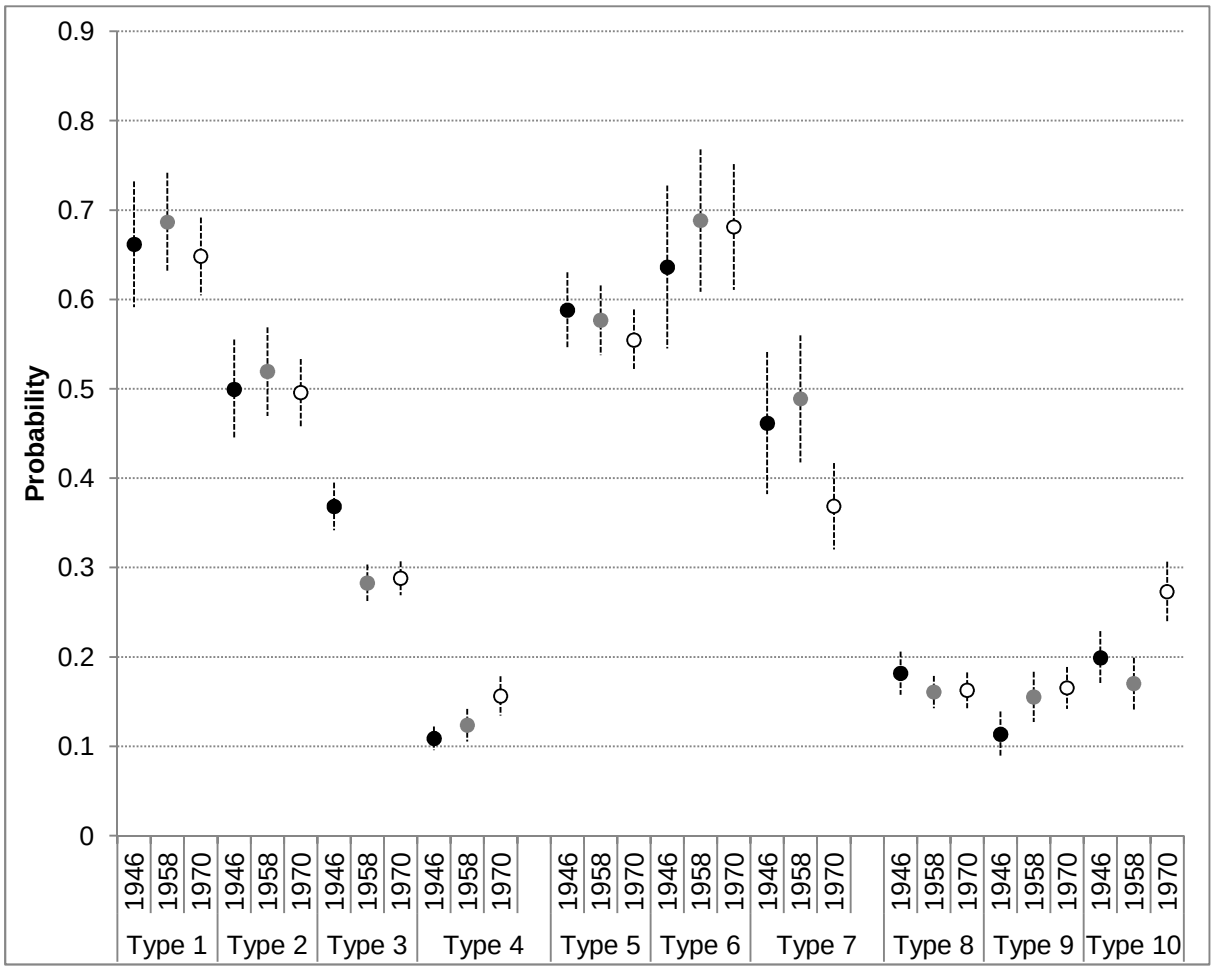
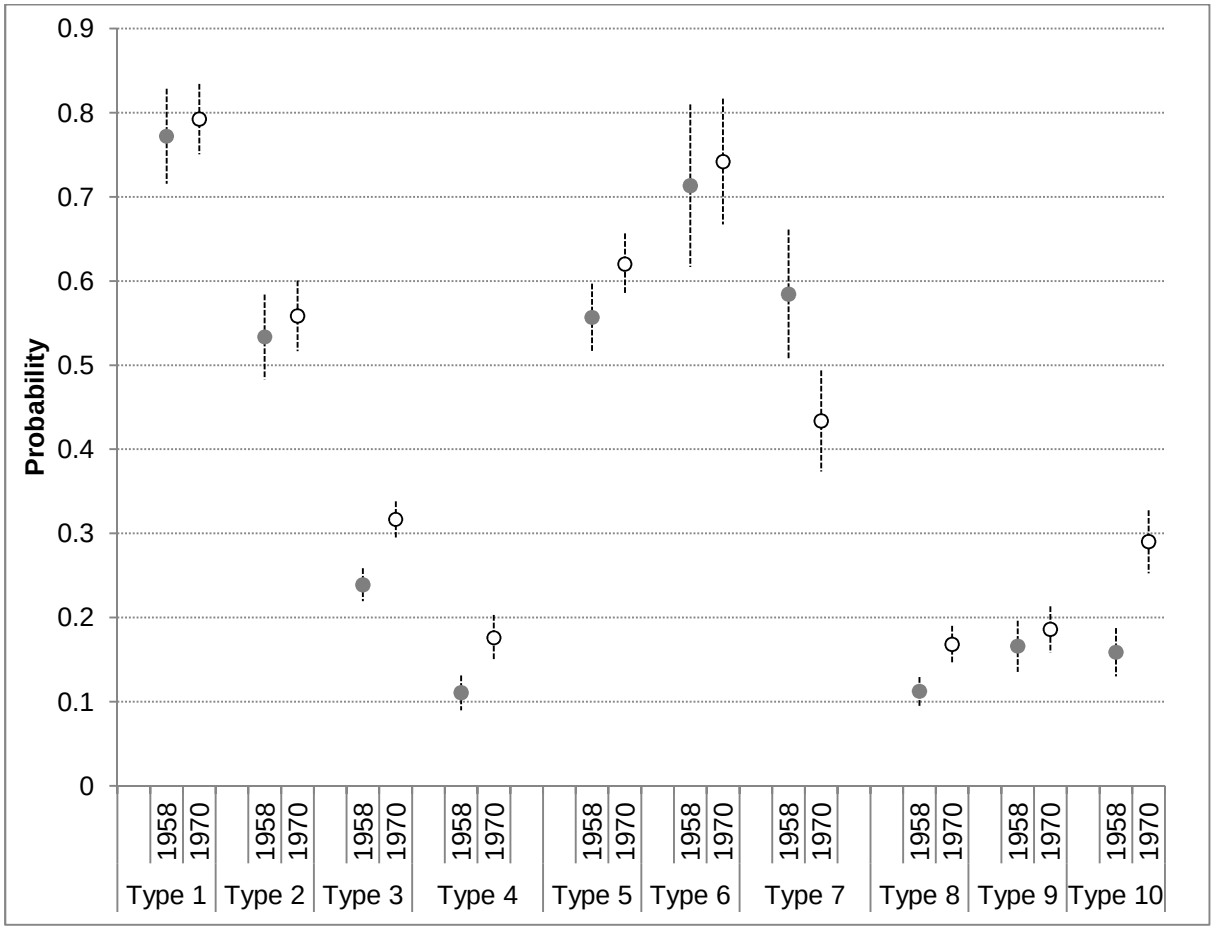


Figure 2: Probability of attaining higher secondary or tertiary level qualifications by cohort and type of hypothetical parents, with 95% confidence intervals, women



Conclusions

There is an ongoing discussion of the extent to which often divergent findings on persistence or decline in the association between children's social origins and their educational attainment reflect real differences or ones in research procedures. In this connection, we have raised an issue that has so far been largely neglected: that of the conceptualisation and measurement of social origins. We have proposed that the aim should be not to decompose parental class, or at least not where class is treated in a well-defined and well-validated way, but rather to decompose social origins so as to include measures of parental status, as understood in a Weberian sense, and of parental education as well as of class.

The results we have presented show that parental class, parental status and parental education cannot be taken as essentially interchangeable indices of social origins. We find that each has a significant independent effect on children's educational attainment. Thus, if parental class is taken as the sole indicator of social origins, as now seems a quite common practice, this is likely to mean that class effects will be overestimated, in that they will pick up different but associated social origin effects, while social origin effects in total will be underestimated. Moreover, our results also indicate that the effects of parental class, status and education cannot be assumed to show similar patterns of persistence or change over time. It would therefore be dangerous to infer from, say, an observed weakening in parental class effects that social origin effects on children's educational attainment are weakening overall. In future discussion of, and research into, inequalities in educational attainment associated with individuals' social origins, the way in which social origins are conceptualised and measured needs to be given full and explicit attention.

However, as well as our findings carrying these methodological implications, we believe that they are also of interest in regard to more substantive issues, and in particular in bringing out the range of differing causal processes or mechanisms that are likely to be at work in the actual generation of social inequalities in educational attainment.

Thus, our finding of more or less constant class effects is not only consistent with evidence that the economic inequalities that our concept of class captures did in fact change little in Britain in the decades up to the 1990s (Goldthorpe and McKnight, 2006; McGovern *et al.*, 2008) but can also be related to a more specific finding. It has been shown (Jackson *et al.*, 2007; Jackson, forthcoming) that in accounting for class-related inequalities in educational attainment in Britain, 'secondary' as opposed to 'primary' effects are of persisting importance: that is, effects resulting not from class differences in children's actual performance at particular stages in their school careers but from class differences in their subsequent educational choices, controlling for performance. Most importantly for present purposes, little change is evident in the tendency for children from relatively disadvantaged class backgrounds to be less ready than children from more advantaged backgrounds to take a given standard of secondary school performance as a basis for seeking tertiary level qualifications. And there is then further evidence to indicate that this tendency reflects the greater economic risks that children in poorer and less secure economic circumstances would

face in making more ambitious educational choices (Goldthorpe, 2007, vol. 2, chs. 2-4).

Again, the weakening of the effects of parental status on children's educational attainment might be expected in view of evidence that status stratification in Britain, though still present, has become less overt in the years since the Second World War: that is to say, while patterns of differential association appear to have changed little, their expression through forms of derogation and deference has declined (Runciman, 1997; Chan and Goldthorpe, 2004). Further, though, and of more direct relevance, is evidence that by the later twentieth century no simple 'homology' would appear to exist between status stratification and cultural stratification, of the kind envisaged by Bourdieu (1984), that would place children from lower status backgrounds at a severe disadvantage in adapting to schools and other educational institutions in which the culture of more advantaged strata prevails. The patterns of status-linked cultural consumption that now show up are not on lines of 'elite versus mass' but take on a less divisive form. While lower status individuals are predominantly 'univorous', consuming popular culture only, higher status individuals are more likely to be culturally 'omnivorous' rather than 'exclusive' - that is, to consume at *all* cultural levels including the popular. Jackson and Marsden (1962) give a graphic account of the difficulties faced by the children of manual workers in traditional grammar schools in the 1950s in overcoming derogation from teachers and fellow pupils and in separating out 'the central culture' from mere 'middle-class values and convention'. It would seem unlikely that the same degree of difficulty was experienced by the counterparts of these children in the comprehensive schools of the 1970s and 1980s.

Finally, as regards the strengthening between the 1958 and 1970 cohorts of the effects of parents' education on their children's performance, at least two processes can be identified that would lead to greater importance attaching to what we have referred to as 'educational resources'. On the one hand, schools have placed a growing emphasis on involving parents in their children's education and in particular in taking a more active role in overseeing and reviewing homework - the required amounts of which appear to have steadily risen at all levels including the primary (Hallam, 2004). A very probable, if unintended, consequence would then be to increase the advantages of children of parents better able to provide support in this respect. On the other hand, at the secondary and tertiary levels, examination and continuation procedures have become far more complex, and options for courses and qualifications to take and for institutions to attend have grown in number - again giving advantages to children whose parents are equipped with the kinds of knowledge needed to offer guidance through the system.

In sum, analyses of inequalities in children's educational attainment that 'decompose' social origins in the way we have proposed would seem essential to achieving a full understanding of the nature and extent of these inequalities - or, in other words, of what exactly needs to be explained before attempts at explanation are made. At the same time, results of the kind we have reported can guide such attempts in providing clear pointers to the widely differing kinds of social processes through which educational inequalities linked to different aspects of children's social origins are actually produced.

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Appendix

Descriptive statistics of parental variables

	1946 cohort	1958 cohort	1970 cohort
Parental class (%)			
1 Higher managerial and professional	4.5	6.6	11.9
2 Lower managerial and professional	8.2	18.0	20.7
3 Intermediate	8.4	14.9	8.7
4 Small employers and own account workers	8.8	5.3	12.6
5 Lower supervisory and technical	17.5	23.2	18.4
6 Semi-routine	16.6	12.3	11.2
7 Routine	35.9	19.7	16.5
Total	100.0	100.0	100.0
Parental status			
Mean score (range 0-1)	0.300	0.445	0.491
Standard deviation	0.222	0.226	0.266
Parental education			
Distribution (%)			
1 Neither parent has any qualification	58.3	40.9	33.3
2 One parent has secondary or lower qualification, other parent has no qualification	13.2	24.8	25.6
3 Both parents have secondary or lower qualifications	3.3	18.0	13.6
4 One parent has higher secondary or lower tertiary qualification, other parent has lower qualification	15.8	8.1	13.3
5 Both parents have higher secondary or lower tertiary qualifications	5.7	2.0	2.3
6 One parent has degree-level qualification, other parent has lower qualification	2.9	4.4	10.0
7 Both parents have degree-level qualifications	0.8	1.9	1.8
Total	100.0	100.0	100.0
Relative scale (%)			
7 levels			
4 levels			
1			
1	0.0	0.0	0.0
2			
2	58.3	41.5	32.6
3	71.5	64.6	58.4
4			
3	74.8	84.5	72.2
5	90.6	92.4	85.6
6			
4	96.2	94.3	87.9
7	99.2	98.4	98.1
Mean level (range 0-1)	0.306	0.363	0.389
Standard deviation	0.371	0.340	0.326

[1] We would appear further to differ from Jaeger in seeing causal explanation in sociology as being dependent on the specification of such generative processes, typically at a more micro level of analysis than those at which the *explananda* are established, rather than being possible simply through the addition of further 'intervening' variables in the same statistical models (Goldthorpe, 2007, vol. 1: ch. 9.) In this regard, epidemiology provides a better exemplar for sociology than econometrics.

[2] The class of a parent in full-time work dominates that of a parent in part-time work, and where parents are both in full- or in part-time work, husband's class is taken to dominate wife's class unless the latter is higher in the ordering of the classes as 1, 2, 3-5, 6, 7, in which case wife's class dominates.

[3] The result in question does *not* show up in analyses we have undertaken (available on request) in which parental class is the sole explanatory variable. It may also be noted from Tables 2 and 3 that men, though not women, originating in Class 3, (that mainly of lower-level non-manual employees) have comparable chances to those of men originating in Class 2 of exceeding all six qualification thresholds - again a difference that is not apparent if the effects of parental class alone are considered, suggesting that what are actually effects of parental status and education are then 'picked up' to a greater extent with Class 3 sons than with daughters.

[4] We are indebted to Jo Blanden for providing us with this constructed variable. A family income variable is also available for the 1958 cohort but is one that is open to question, at least for use in comparison with the 1970 variable (Erikson and Goldthorpe, 2010).

[5] These interaction effects are estimated following the procedure suggested by Karaca-Mandic, Norton and Dowd (2012).

[6] We have in fact repeated our analyses using instead the highest threshold, that

distinguishing those attaining degree-level qualifications from the rest, and the results (available on request) are on essentially the same lines as with the fourth threshold.

[7] Separate analyses revealed the need to include these - always negative - interactions. No significant interactions between parental status and parental education were shown up.