

# Class inequality and meritocracy: a critique of Saunders and an alternative analysis<sup>1</sup>

## ABSTRACT

Saunders' recent work claiming that contemporary British society is to a large extent 'meritocratic' is criticized on conceptual and technical grounds. A reanalysis of the National Child Development Study data-set, used by Saunders, is presented. This reveals that while merit, defined in terms of ability and effort, does play a part in determining individuals' class destinations, the effect of class origins remains strong. Children of less advantaged class origins need to show substantially *more* merit than children from more advantaged origins in order to gain similar class positions. These differences in findings to some extent arise from the correction of biases introduced by Saunders; but there are also features of his own results, consistent with those reported in the reanalysis, which he appears not to have fully appreciated.

**KEYWORDS:** Social class; inequality; mobility; merit

## INTRODUCTION

In this paper we have two main aims:

- (i) to provide a critique of arguments and of data analyses recently advanced by Saunders (1996, 1997 esp.) concerning the extent to which present-day British society is meritocratic;
- (ii) to set out an alternative approach to this issue and to show that when this approach is pursued on the basis of the same data-set as that used by Saunders' findings are reached with clearly different implications to those that Saunders would believe he has established.

In the remainder of this introductory section we briefly review Saunders' position. In the second section of the paper we turn to our critique, and in the following sections we make our more positive contribution.

Saunders' concern is to show that social selection in modern Britain is primarily meritocratic in character. His understanding of 'meritocracy'

appears to be essentially that of Young (1958): i.e. a society is meritocratic to the extent that merit, defined as 'IQ plus effort', determines the recruitment of individuals to class positions of differing advantage and power.

In pursuit of this goal, Saunders feels it necessary to launch an attack on the British tradition of social mobility research, notably as represented by Glass (1954) and Goldthorpe (1987). It is work in this tradition, Saunders holds, that is chiefly responsible for the widespread, but mistaken, view that British society is far removed from the meritocratic ideal. In particular, Goldthorpe (1987), having demonstrated the falsity of *marxisant* claims to the effect that class mobility in British society is severely restricted in frequency and range, then 'managed to pull off . . . a conjuring trick in the face of his own empirical findings' (1996: 11), in order to show that inequalities of opportunity were none the less still marked and resistant to change.

The basis of this conjuring trick was the distinction made by Goldthorpe between absolute and relative rates of mobility. Saunders, following Payne (1987), rejects Goldthorpe's 'emphasis' on the virtual constancy of relative rates – taken as an indicator of inequality of opportunity – as being unduly 'pessimistic'. It diverts attention from high absolute rates and, especially, from high rates of upward mobility that are generated by class structural change (1996: 16). Indeed at some points (e.g. 1997: 280) Saunders would seem ready to go further and accept Noble's view (1995) that social fluidity cannot in fact be 'partialled out' from structurally induced mobility. However, this is not a view that Saunders sustains in his own empirical analyses. Here, he does utilize the distinction between absolute and relative rates, but he still seeks to differentiate his position from that of Goldthorpe: that is, by arguing that Goldthorpe's use of odds ratios in measuring relative rates is misleading and that the appropriate measure is provided by disparity ratios.

Saunders' critique of mobility research concludes with the observation that the concern to demonstrate inequalities in relative rates has been associated with a neglect of the actual social processes that underlie these rates: i.e. with a neglect of the question of 'why individuals achieve the positions which they do' (1996: 16–17). It has been assumed that these processes are ones that reflect patterns of class advantage and disadvantage of an 'unfair' kind; but the alternative possibility is that they are in fact largely meritocratic processes through which individuals get what they deserve. Moreover, in response to authors such as Marshall and Swift (1993, 1996; see also Marshall, Swift and Roberts 1997) who have shown that relative mobility chances are only partially mediated through educational qualifications, Saunders would maintain (1997: 276) that educational attainment is a 'hopeless' indicator of merit in the sense of IQ plus effort – and that it is 'irrelevant' if other exponents of the meritocracy thesis, such as Bell (1972, 1973), should have argued otherwise. For this thesis to be properly assessed, IQ and effort – factors that sociologists have disregarded on largely ideological grounds – must be directly included in the analysis.

To make such an assessment is then Saunders' aim in his empirical work, which is based on the data-set accumulated in course of the National Child Development Study (NCDS). He begins by examining the effect on disparity ratios of controlling for 'merit', as he would understand it, but then proceeds to ever more elaborate exercises: i.e. to logistic regression and then, via multiple regression, to causal path analysis. At the same time, Saunders moves with increasing conviction to his main conclusion: namely (cf. 1996: 72), that what chiefly determines where individuals end up within the class structure is whether or not they are 'bright' and whether or not they 'work hard' – just as the meritocracy thesis would claim. In comparison, class origins and other 'social background' factors are of only minor importance, and thus, in emphasizing these factors, sociologists have for years 'been barking up the wrong tree'. In sum, Britain has to be recognized as 'to a large extent a meritocratic society'; serious and unjustifiable inequalities of opportunity related to class origins do not exist.

#### CRITIQUE OF SAUNDERS

On one point we agree with Saunders (cf. Erikson and Goldthorpe 1992: ch. 11; Breen and Rottman 1995). Sufficient work has by now been accomplished on the pattern and trend of both absolute and relative rates of social mobility, in Britain and in other advanced societies, for attention profitably to turn to the further investigation of mobility processes. However, as Marshall and Swift have already observed (1996), Saunders does not adequately appreciate the efforts that have in fact already been made in this regard – nor, we would add, the difficulties that have been encountered. We elaborate our critique under three different, though, as will be seen, interconnected, heads as follows.

#### *Absolute and Relative Rates*

The claim that in mobility research too much 'emphasis' has been given to relative rather than to absolute rates derives from – and further creates – confusion of a quite unnecessary kind. A focus on one kind of rate or the other is appropriate depending upon the issue being addressed (see further Goldthorpe 1990: 413–14, 421–2).

There is not, so far as we are aware, any dispute that class structural change in the course of the development of industrial societies has tended to increase absolute rates of mobility; nor that, in the more recent stages of this development, the growth of the service class or salariat has made upward mobility more likely than downward. In other words, one can speak as Saunders does – in fact simply echoing Goldthorpe (1987: ch. 12) – of increasing 'room at the top' providing greater opportunity for all. But nothing whatever then follows from this about equality or inequality of opportunity as regards the mobility chances of individuals of differing class

origins. This issue remains – inequality of opportunity could be increasing, decreasing or unaltered, despite the ‘upgrading’ of the opportunity structure overall – and must be taken as a matter for quite separate investigation. Moreover, this must be on the basis of some analysis of relative mobility rates; for, as Marshall and Swift (1996: 376) have aptly remarked, inequality is, inherently, a relative concept.

The force of the foregoing argument is indeed brought out by the degree of inconsistency that, as we have already noted, arises in Saunders’ position. Having inveighed against the preoccupation of mobility researchers with relative rates and having gone so far as to entertain the idea that there is in fact no way of statistically identifying them, he none the less proceeds to base a significant part of his empirical analyses on relative rates – but as measured by disparity ratios instead of odds ratios.

### *Disparity Ratios and Odds Ratios*

Saunders (1997: 279) regards his preference for disparity ratios over odds ratios as ‘perhaps the central issue’ that separates him from mainstream mobility researchers. If this is so, then he is in real difficulty; for it is here that his position is most obviously untenable. Disparity ratios express relative mobility rates in that they compare the chances of individuals of different classes of origin being found in *one particular* class of destination. Odds ratios, however, set *these* chances themselves in comparison with those of the same individuals being found in some *other* destination class (see further, Goldthorpe 1987: 74–80). Saunders objects to odds ratios on two main grounds.

The first (1996: 14–15) is that odds ratios, unlike disparity ratios, are an ‘extreme’ measure of relative mobility rates in that they combine chances of success or failure – i.e. of upward or downward movement – in a single statistic. What follows from this is, though, in itself quite trivial. Saunders is ready to calculate disparity ratios (cf. 1996: ch. 7) to show the relative chances of individuals of middle-class and working-class origins attaining middle-class positions *and* to show the relative chances of these same two sets of individuals ending up in working-class positions. But he is not ready to combine – i.e. to multiply – these two ratios so as to give an odds ratio that would indicate the state of the ‘competition’ overall.<sup>2</sup> This curious stance need not be of any great consequence, since Saunders’ readers can always do the multiplication for him. However, it has then to be noted that in his empirical work Saunders does tend to focus on just one half of the picture: that is, on disparity ratios that pertain to upward rather than to downward mobility chances. There is of course no justification for this partiality, and it can – and indeed in certain instances does – prove misleading.<sup>3</sup>

Saunders’ second objection to odds ratios seems altogether more serious. Treating relative mobility rates in terms of odds ratios is, he argues (1997: 280), inappropriate because they will tend to show change only in one

direction: they may rise or stay constant but – other than in quite exceptional historical circumstances – they will not fall. Where, in particular, opportunities for upward mobility are increasing, as in advanced societies like Britain, it is inconceivable that a reduction in odds ratios should occur: that is, because it is inconceivable that children of less advantaged class origins should take up such opportunities at a greater rate than do others. This argument, revealing a major flaw in work in the ‘Nuffield tradition’, has, Saunders tells us, been maintained by Noble for twenty years. However, if this is indeed the case, one can only reply that Noble has been wrong for twenty years and that Saunders has now joined him in his error.

To begin with, what Noble and Saunders would regard as inconceivable can in fact, with a modicum of sociological imagination, be recognized as an entirely realistic possibility. Consider simply the case where, initially, rather severe material and institutional barriers exist to the upward mobility of working-class children, but where these barriers are then to some degree reduced – by, say, egalitarian reforms in social welfare and educational policy. In such a case, a more rapid improvement in the chances of upward mobility of working-class children than of children of more advantaged backgrounds could well be expected (with, perhaps, a narrowing also in the relative risks of entry into working-class positions). In other words, the competition among children of different class backgrounds would become somewhat more ‘meritocratic’, or at all events less rigged, relative mobility rates would become somewhat more equal, and the odds ratios expressing them would in turn diminish.

Moreover, there is no difficulty in providing *actual* cases of such a fall in odds ratios – and under just the kinds of structural conditions that Noble and Saunders would see as making this ‘almost impossible’. For example, Erikson and Goldthorpe (1992: ch. 3, Table 3.2 esp.) document several such cases, including that of Sweden (cf. Jonsson 1991) which would seem here of special relevance. Even as the Swedish class structure offered steadily greater opportunities for upward mobility overall, class differences in relative mobility chances declined uniformly across successive cohorts of Swedish men and women born between 1920 and 1950 – at the same time as national policies aimed at reducing class-linked inequalities in incomes and levels of living achieved a measure of success.

In short, Saunders’ attempt to demonstrate the superiority of disparity ratios over odds ratios is an evident failure. In addition, it has to be said that nowhere does Saunders show that he securely grasps the key point of the ‘logic’ of odds ratios that he is so anxious to subvert. Odds ratios are, and must be, the preferred measure of relative mobility rates because – unlike disparity ratios taken singly – they are a measure that is ‘insensitive’ to the marginal distributions of mobility tables through which structural effects on mobility, and changes therein, are reflected (cf. Marshall, Swift and Roberts 1997: Appendix B). This is why, *pace* Noble, relative rates, in terms of odds ratios, *can* be isolated as a component of absolute rates. Moreover, at the same time as they thus serve as the basis of the analysis of social fluidity,

odds ratios can also be understood in another way: that is, as indicating the association that exists within a mobility table between class origins and class destinations, *net* of the origin and destination main effects: i.e. the larger the ratio, the stronger the association. And, as will be seen, it is this association that must play a central part in any assessment of the meritocracy thesis.

### *Logistic Regression and Causal Path Analysis*

Saunders contends (1997: 262) that mobility researchers have established a statistical association between class origins and destinations but have then simply assumed that this is a product of social advantage and disadvantage – thus ruling out the possibility that the association might in fact be quite legitimately mediated via merit. This argument reveals Saunders' disregard of a large body of relevant literature. But he does at all events here appear to recognize what the most straightforward way of testing the meritocracy thesis would be: (i) establish the extent and pattern of the association between class origins and destinations; and then (ii) observe what happens to this association when variables indicative of individual merit are brought into the analysis. If a substantial association remains, the meritocracy thesis is undermined; if the association largely disappears, the thesis is supported. In a perfect meritocracy, class of origin and class of destination would be statistically independent once merit was taken into account.

Saunders begins his empirical work as if he intended to pursue exactly this kind of approach. Thus, he examines (1996: Table 5) the effect of controlling for ability<sup>4</sup> on selected relative mobility rates. If he had only treated the latter on the basis of odds ratios rather than disparity ratios, he would in fact have made a very useful start – while, however, producing results probably less to his liking than those he reports (cf. Savage and Egerton 1997).

Next he turns to logistic regression. This is in principle yet more promising, since logistic regression is a technique closely akin to loglinear modelling and thus based on odds ratios. It could indeed provide an apt way to implement a version of the strategy for testing the meritocracy thesis that was outlined above. One could compare gross coefficients for the effect of class origins on class destinations with their partial values once 'merit' variables were introduced. But, again, Saunders misses out. Instead of taking this approach, he uses logistic regression to try to do something clearly different and something that is both less apposite and technically far more difficult: that is, to evaluate the relative importance of variables indicative of merit and of social advantage in predicting in which of two destination classes children of a particular origin class will be found (1996: Tables 6 and 7; 1997: Tables 4 and 5).

Moreover, when Saunders comes to multiple regression and, finally, to his *pièce de résistance*, a highly complex causal path analysis, the idea of starting from the association of class of origin and class of destination and then

examining how far this is mediated via merit entirely disappears. The dependent variable of the analysis is in fact no longer class position at age 33 but rather respondent's score on the Hope–Goldthorpe scale (henceforth HG) of occupational desirability. And the whole concern of the analysis is to compare 'merit' and 'social advantage' variables in terms of the size of their direct and indirect effects and of the proportion of variance in HG scores that they 'account for'. It is the results of this comparison that would seem the ultimate source of Saunders' confidence in his claim (1996: 72) that Britain is 'to a large extent a meritocratic society'. No direct effect of class of origin on men's HG score at age 33 shows up, while all the important indirect effects run via measures of ability and motivation; and the two latter variables would appear clearly to win out as explanatory factors over any variables related to social advantage (1996: Tables 8–12).

However, these results in no way provide such compelling evidence in favour of the meritocracy thesis as Saunders would like to think. Having moved steadily away from the relatively simple approach to testing this thesis that he seemed initially to accept, Saunders appears not to appreciate that to set up a 'variable race' in the way that he does – that is, between 'merit' variables and 'social advantage' variables – is a highly problematic undertaking.<sup>5</sup>

Some statisticians, for example, King (1986), would in fact argue that there is no way of determining the result of such a race, in a regression context, unless the different independent variables involved *have a common metric*, and that the use of standardized coefficients, as in causal path analysis, provides no substitute for this requirement and may be misleading in itself (cf. also, with regard to *The Bell Curve* debate in the USA, Goldberger and Manski 1995 and Heckman 1995). Others, it is true, would not wish to go this far. But what is important – and what Saunders ignores – is that there is now a general recognition that assessing the relative importance of independent variables, whether in a regression context or otherwise, is a much more complex and difficult matter than has often been supposed (see e.g. Kruskal and Majors 1989), and one to which measurement issues are crucial.<sup>6</sup> Whatever view may prevail on the *principle* of comparing the effects of variables with different metrics, there can be no question on at least one practical matter: namely, that when measuring variables to be set in competition with each other, great care must be taken that this is not done in such a way that the result of the race is more or less 'fixed' from the start. It is, however, in precisely this regard that Saunders' work is most open to objection.

Saunders regards the 'merit' variables of ability and effort as continuous and the 'social advantage' variable of main interest, that of class of origin, as categorical. This is in itself unexceptionable. But Saunders does then bring a potentially very serious bias into his analyses that is all the more unfortunate in that it must run clearly in favour of the case he is seeking to make out. In operationalizing class of origin he uses the Registrar General's classification, which is by now well known to be in various ways deficient (cf.

Marshall et al. 1997: ch. 2 ); he collapses this from its original six categories to just three; and he then treats these three categories not as dummy variables but rather as forming a three-point scale – i.e. as in effect a continuous variable but one with a very restricted range of values (cf. Saunders 1996: 52). It is therefore scarcely surprising that in the outcome the ‘merit’ variables should win the race. Such a result will to some non-negligible degree be simply a statistical artefact, and *pro tanto* its empirical significance must be discounted.<sup>7</sup> We would not wish to claim that Saunders here introduces a bias knowingly; but we would suggest that had he been better acquainted with obviously relevant literature, he would have been far less likely to have done so inadvertently. There are, moreover, other unfortunate aspects of Saunders’ measurement of variables in regard to ability and effort; these we take up in the following section.

#### DATA AND VARIABLES

As stated at the outset, we shall base our own analyses on the same data-set as used by Saunders: i.e. that of the NCDS, which comprises data relating to all children born in Great Britain in one week in March, 1958, which were collected at birth and then in five further surveys at ages 7, 11, 16, 23 and 33.<sup>8</sup> However, we differ from Saunders both in the general way in which we view this data-set and also in the detail of our use of it.

Saunders emphasizes the great potential of the NCDS data-set for the analysis of mobility processes and for the testing of the meritocracy thesis in particular. But we would wish further to note that, in actuality, the data-set has several major problems. First (and as Saunders does acknowledge), there has been some considerable attrition of respondents over the duration of the study, which is biased in some known, and probably also in some unknown, ways; secondly, while a vast quantity of information has been collected, its quality is highly variable and there are, for sociological purposes at least, some unfortunate gaps; and thirdly, the documentation of the data-set, though voluminous, is often not easy to follow and still in some respects inadequate. For these reasons, then, we would regard any results derived from the data-set – Saunders’ and our own included – as being eminently open to revision, either as hitherto unrecognized data problems emerge or as recognized problems are better treated.<sup>9</sup> We next turn to more specific issues.

#### *Coverage*

The NCDS study does of course cover both sexes. In his earlier analyses in the sequence noted above, Saunders includes both men and women but does not present results separately for them. However, the causal path analysis, to which he attaches major weight, is restricted to men only. In our own analyses we shall throughout consider men and women in parallel.

A further restriction in all of Saunders’ analyses is that he confines his



attention to those respondents at age 33 (i.e. in 1991) who were at that time in employment: individuals who were out of the labour market or unemployed were excluded on the grounds that they could not be given a current class position (1996: 48). We prefer to follow what has become the standard practice in social mobility research of allocating such individuals to a class position on the basis of their last employment. This would seem less likely to create bias, and increases both sample size and comparability with other studies.

### *Variables*

We concentrate our attention on a limited number of variables which, theoretically and in the light of the empirical work of Saunders and others, would seem to be of greatest relevance in testing the meritocracy thesis. We do, however, in various ways differ from Saunders in our treatment of these variables.

*Social class:* We have already criticized Saunders' use of a threefold collapse of the Registrar General's classification in order to establish respondents' class of origin in his causal path analysis. He does in fact use this same collapse throughout his analyses and in regard to respondents' class of destination – i.e. as of age 33 – as well as class of origin (before, as we have noted, deciding to treat destination position in terms of HG occupational desirability scores). Saunders' use of such an inferior instrument as the RG classification is quite unnecessary. The NCDS data-set includes a variable for the respondent's father's class, at respondent's age 16, coded to ONS Socio-Economic Groups (N2385), from which, as is well known (cf. Heath and McDonald 1987), a fair approximation to the Goldthorpe class schema in its seven-class version can be derived. We therefore index respondents' class of origin by use of the schema in this form. The data-set also includes information on the respondent's class at age 33 as coded directly to the Goldthorpe schema (R540080) and we can then index class of destination also by this schema, again using its seven-class version. Since Saunders is so much concerned with criticism of the British tradition of research in class mobility, it would seem appropriate to retain here the conceptual basis of this research. Moreover, as Marshall, Swift and Roberts have pointed out (1997: Appendix E), the fact that the classes of the schema are not completely ordered, need not be seen as detracting from its appropriateness in discussions of equality of opportunity and meritocratic social selection.

*Ability:* The NCDS data-set includes a number of variables relating to respondents' academic ability as assessed at different ages. Saunders uses various of these, singly or in combination. We, however, use only one: that referring to the results, on an 80-point scale, of a General Ability Test taken at age 11 (N920). The other tests administered to respondents while at school are less related to ability *per se* than to actual *attainment*, and it is

known (Fogelman (ed.) 1983: 28–31) that the average scores achieved on them by children of different class backgrounds widen over the course of their school careers. In contrast, performance on the General Ability Test would appear to give the best proxy available in the NCDS data-set to IQ scores. In Saunders' work, we may add, a good deal of slippage occurs between the concepts of intelligence, ability and attainment. However, if we are concerned with testing the meritocracy thesis, where merit is defined as 'IQ plus effort', it would seem important to keep our empirical analyses in as close accord as possible with this definition.<sup>10</sup>

*Effort:* Unlike ability, effort would not seem to have been a concept of direct concern to the researchers who carried out the successive rounds of the NCDS. Saunders seeks therefore to measure effort via a number of proxy variables: scores on an Academic Motivation Scale from a test administered at age 16; teachers' ratings of pupils' absence and truancy records at ages 11 and 16; and respondents' attitudes to work at age 33.<sup>11</sup> This latter item is clearly unacceptable, since the attitudes in question will be contemporaneous with, if not subsequent to, the class positions held by respondents at that age, and thus could scarcely be of causal relevance in this regard. Furthermore, it is known (Fogelman (ed.) 1983: 74–6, 200, 319–26) that among NCDS respondents, absence from school is strongly associated with ill-health, and truancy with housing conditions, especially overcrowding: in other words, these would appear to be as much indicators of constraint as of volition. Again, therefore, we confine our own attention to just one item, the scores on the Academic Motivation Scale (N1760), which are in fact the sum of those resulting from eight five-point Likert scales measuring responses to statements about school and schoolwork. For convenience, we reverse the scoring of this scale so that higher values indicate higher levels of motivation.

*Educational qualifications:* The NCDS data-set contains several variables relating to respondents' educational qualifications. Saunders, apparently, uses a variable which refers to school examination results at age 16, in conjunction with another which refers to reported qualifications at age 33.<sup>12</sup> It would, however, seem simpler, and for our own purposes at least, no less adequate, to work with just the one variable from the survey made at respondents' age 33 which codes highest level of qualification achieved into six ordered categories ranging from 'no qualification' to 'degree or higher' (HQUAL33). By scoring these categories from 1 to 6, we can then treat educational qualifications, like ability and effort, as a continuous variable.

#### ANALYTICAL APPROACH AND RESULTS

We have already indicated what we would regard as the most simple and direct way of testing the meritocracy thesis: i.e. start from the association

that prevails between class origins and destinations and then see what happens to this association when ‘merit’ variables are included in the analysis – the key question here being that of whether or not a substantial association persists. Using the NCDS data-set, we implement this approach in two stages: first, we construct intergenerational class mobility tables for men and women and show how the extent and pattern of association between origins and destinations can be captured by a loglinear model; then we introduce into this model ability, effort and educational qualifications treated as individual-level variates and examine the effects, if any, that controlling for these factors has on the parameters for the origin–destination association estimated under the model.

Association in Intergenerational Mobility Tables

The variables for class origins and class destinations specified in the previous section allow us to construct intergenerational mobility tables on the basis of the same sevenfold version of the Goldthorpe class schema as was used in previous work on class mobility in Britain (Goldthorpe 1987). These are shown in Table I.

It is apparent that the number of cases here involved – 5090 in total – is small when compared with the original NCDS sample size of 17,404. This

TABLE I: *Mobility tables for men and women*

Origin class		Destination class at age 33							
		I	II	III	IV	V	VI	VII	
<i>Men</i>									
I	Upper service	143	71	18	15	15	22	12	296
II	Lower service	157	121	41	37	31	64	43	494
III	Routine nonmanual	53	35	24	12	13	38	26	201
IV	Petty bourgeoisie	31	20	9	42	8	32	19	161
V	Supervisors etc.	68	31	19	21	22	48	46	255
VI	Skilled manual	120	108	50	45	49	172	153	697
VII	Nonskilled manual	58	45	18	27	33	105	121	407
		630	431	179	199	171	481	420	2511
<i>Women</i>									
I	Upper service	51	116	130	7	2	6	16	328
II	Lower service	83	140	188	10	6	13	53	493
III	Routine nonmanual	17	34	91	3	0	2	30	177
IV	Petty bourgeoisie	16	27	87	9	4	8	24	175
V	Supervisors etc.	27	63	131	2	6	9	53	291
VI	Skilled manual	45	128	281	15	20	29	167	685
VII	Nonskilled manual	26	54	173	11	15	26	125	430
		265	562	1081	57	53	93	468	2579

is the result of panel attrition and also of our deletion of cases lacking valid values on the class variables or on any of those we employ later in our analysis. Although the marginal distributions of the tables do display most of the general features that we would expect, it is very probable that Class I is somewhat over-represented and Class VII, under-represented (cf. NCDS User Support Group 1995).

With  $7 \times 7$  mobility tables such as those shown in Table I, there are 36 degrees of freedom available for modelling the pattern of association between origins and destinations. However, rather than using all of these, and thus resorting to a 'saturated' model', we attempted to find a more parsimonious model specification that would lead to an adequate reproduction of the data – while also retaining theoretical intelligibility. To this same end, Goldthorpe (1987), following Hauser (1978), worked with a form of loglinear model, known as a 'topological' model. In such a model, each cell of the mobility table is allocated to one of a set of disjoint levels. These levels reflect the strength of association between the rows and columns in which particular cells are located, and so all cells placed at the same level are posited to show the same strength of association between class origins and destinations. Goldthorpe (1987: ch. 4 and Table 4.4 esp.) was able to produce an eight-level topological model which gave a good fit to the  $7 \times 7$  intergenerational class mobility table for men derived from the Oxford Mobility Study of 1972. We began, therefore, by applying Goldthorpe's model to the NCDS tables.

In the case, first, of the men's table an acceptable fit was achieved but it was evident that a significant improvement could be made essentially by simplification – i.e. by the collapsing of levels 1 and 2 and levels 4 and 5 of the original version.<sup>13</sup> This gave a six-level model which returned  $G^2 = 39.2$  with 31 df;  $p = .15$ . In the case of the women's table, this six-level model was then applied and gave a marginally acceptable fit but again one that could be improved by simplification: i.e. by the collapsing of the new levels 1 and 2. The resulting five-level model returned  $G^2 = 46.2$  with 32 df;  $p = .05$ . The design matrices for the two accepted models are given in Table II.

Through these models, then, we can capture the pattern of net association between class origins and destinations using only five and four degrees of freedom, respectively, rather than the 36 available. The levels parameters estimated under the models, which are given in Table III, are functions of the odds-ratios implicit in the mobility tables as modelled. It can be shown (Goldthorpe 1987: 119) that

$$\frac{F_{ik} / F_{il}}{F_{jk} / F_{jl}} = e^{(D_{ik} - D_{il}) - (D_{jk} - D_{jl})}$$

where  $F$  denotes the fitted frequencies in the cell of a mobility table;  $i, j$  are a pair of origin classes;  $k, l$  a pair of destination classes; and  $D$  is the parameter, in log form, for the level to which a particular cell is allocated.

In turn, therefore, all relative mobility rates – or inequalities in class

TABLE II: *Design matrices for models for men and women*

Origin class	Destination class at age 33						
	I	II	III	IV	V	VI	VII
<i>Men</i>							
I	1	2	3	3	5	6	6
II	2	2	3	4	4	5	5
III	3	3	2	4	3	4	4
IV	3	3	3	1	4	4	4
V	3	3	3	4	3	3	4
VI	5	4	3	4	3	3	3
VII	5	4	3	4	3	3	2
<i>Women</i>							
I	1	1	2	2	4	5	5
II	1	1	2	3	3	4	4
III	2	2	1	3	2	3	3
IV	2	2	2	1	3	3	3
V	2	2	2	3	2	2	3
VI	4	3	2	3	2	2	2
VII	4	3	2	3	2	2	1

TABLE III: *Levels parameter estimates (standard errors in parentheses)*

	Levels					
	1	2	3	4	5	6
Men	0	-0.51 (0.12)	-1.02 (0.12)	-1.20 (0.13)	-1.46 (0.12)	-2.08 (0.20)
Women	0	-0.43 (0.07)	-0.69 (0.08)	-1.01 (0.10)	-1.78 (0.23)	

mobility chances – can be derived from the levels parameters. Thus, if, say, we wish to find the chances, under our model, of men born into Class I (the higher service class) being found in Class I rather than in Class VII (the nonskilled working class) relative to the chances of men born in Class VII being found in Class I rather than Class VII, we take, by reference to Tables II and III and the formula above,

$$(D1 - D6) - (D5 - D2) = (0 - -2.08) - (-1.46 - -0.51) = 2.08 - -0.95 = 3.03$$

and  $e^{3.03} = 20.7$ . That is to say, the relative chances in question are estimated at over twenty to one.

Being thus able, through the levels parameters, to sum up what, for our present purposes, are the essential features of the mobility tables that we have constructed is then of great advantage to us when we move on to the second stage in our strategy for testing the meritocracy thesis: i.e. that of examining the effects of introducing ‘merit’ variables.

*The Effects of Ability, Effort and Educational Qualifications*

What we now need to know is how far the levels parameters that we have estimated will change when we control for what might be taken as various indicators of merit. To this end, we apply a method proposed by Breen (1994; cf. Logan 1983) for adding continuous covariates, measured at the individual level, to loglinear models. The basis of this method is to rewrite the loglinear model for grouped data as a multinomial logit model for individual-level data. Once we have done this, other variables which are truly continuous can then easily be added to the model.

We implement this approach in the following way. First of all, we add to our original topological models for our men's and women's mobility tables the measure of academic ability that we previously singled out: i.e. respondents' results on the General Ability Test taken at age 11, which we would regard as our best available proxy for IQ. A comparison between the levels parameters initially reported in Table III and those resulting from our augmented models will then tell us how far class inequalities in relative mobility chances are the product of class differences in ability, thus understood. Secondly, we control for ability and at the same time for effort, using here our preferred indicator of respondents' scores on the Academic Motivation Scale at age 16. Now the comparison between the levels parameters of Table III and those of the augmented models will tell us the degree to which inequalities in relative mobility chances arise from class differences in both ability and effort, as we have measured them – and, in turn, we would argue, will give the best indication possible, on the basis of the NCDS data-set, of the importance in this respect of merit as Saunders would conceive it. Thirdly, we introduce our educational qualifications variable, and use it in two different ways. To begin with, we include it in our topological models as a control variable just in the same way as we have done with our variables for ability and effort. Thus, we can see the extent to which the levels parameters are modified by educational qualifications, which some authors – though not Saunders – would wish to equate with merit. Next, we control for educational qualifications, ability and effort in the same model. When the results thus produced are related to those from the models including only ability and effort, we can gain some idea of how two different versions of the meritocracy thesis fare in comparative assessment.

The results of fitting the various models that have been described are shown separately for men and women in Tables IV and V. In each of these tables column (1) repeats the levels parameters reported in Table III. Column (2) then reports the results obtained when controlling for ability; column (3), when controlling for ability and effort; column (4), when controlling for educational qualifications; and column (5), when controlling for educational qualifications, ability and effort. In columns (2) to (5) the coefficients refer to the partial levels effects and to the partial effects of the other variables involved on the log-odds of an individual being found in each other destination class, relative to being found in Class I.<sup>14</sup>

The levels parameters shown in column (1) of Tables IV and V are clearly

TABLE IV: *Levels parameters and coefficient estimates for models fitted to men, N = 2511 (standard errors in parentheses)*

Model	(1)	(2)	(3)	(4)	(5)
<i>Log-likelihood</i>	-4444.03	-4250.95	-4179.28	-4082.87	-4011.49
<i>Parameters</i>	11	17	23	17	29
<i>Levels</i>					
2	-0.505 (0.12)	-0.514 (0.12)	-0.503 (0.12)	-0.460 (0.13)	-0.469 (0.13)
3	-1.018 (0.12)	-0.944 (0.13)	-0.931 (0.13)	-0.806 (0.13)	-0.803 (0.13)
4	-1.202 (0.13)	-1.095 (0.13)	-1.079 (0.13)	-0.994 (0.13)	-0.969 (0.13)
5	-1.462 (0.12)	-1.254 (0.13)	-1.222 (0.13)	-1.148 (0.13)	-1.073 (0.13)
6	-2.083 (0.20)	-1.728 (0.21)	-1.693 (0.21)	-1.464 (0.21)	-1.392 (0.22)
<i>Ability/10* logit</i>					
II v I		-0.097 (0.05)	-0.095 (0.05)		-0.074 (0.05)
III v I		-0.120 (0.06)	-0.182 (0.06)		-0.038 (0.07)
IV v I		-0.497 (0.06)	-0.437 (0.06)		-0.241 (0.07)
V v I		-0.482 (0.06)	-0.443 (0.06)		-0.261 (0.07)
VI v I		-0.653 (0.05)	-0.605 (0.05)		-0.437 (0.05)
VII v I		-0.786 (0.05)	-0.719 (0.05)		-0.393 (0.06)
<i>Effort logit</i>					
II v I			-0.011 (0.01)		-0.006 (0.01)
III v I			-0.046 (0.02)		-0.016 (0.02)
IV v I			-0.114 (0.02)		-0.074 (0.02)
V v I			-0.086 (0.02)		-0.049 (0.02)
VI v I			-0.098 (0.02)		-0.062 (0.02)
VII v I			-0.122 (0.01)		-0.062 (0.01)
<i>Education logit</i>					
II v I				-0.110 (0.05)	-0.076 (0.06)
III v I				-0.516 (0.07)	-0.495 (0.08)
IV v I				-0.874 (0.07)	-0.694 (0.08)
V v I				-0.794 (0.07)	-0.643 (0.08)
VI v I				-0.864 (0.06)	-0.614 (0.06)
VII v I				-1.374 (0.07)	-1.136 (0.07)

*Note:* \* For ease of presentation the ability parameters reported here have been multiplied by 10. Thus, the effect of an individual's ability on any particular logit is equal to the reported parameter multiplied by ability divided by 10.

TABLE V: *Levels parameters and coefficient estimates for models fitted to women, N = 2579 (standard errors in parentheses)*

Model	(1)	(2)	(3)	(4)	(5)
<i>Log-likelihood</i>	−3822.77	−3680.43	−3633.98	−3416.11	−3372.06
<i>Parameters</i>	10	16	22	10	28
<i>Levels</i>					
2	−0.426 (0.07)	−0.316 (0.07)	−0.295 (0.07)	−0.187 (0.08)	−0.173 (0.07)
3	−0.688 (0.08)	−0.523 (0.08)	−0.488 (0.08)	−0.297 (0.09)	−0.283 (0.10)
4	−1.013 (0.10)	−0.720 (0.11)	−0.669 (0.11)	−0.543 (0.11)	−0.451 (0.11)
5	−1.783 (0.23)	−1.235 (0.23)	−1.129 (0.24)	−0.926 (0.24)	−0.728 (0.24)
<i>Ability/10* logit</i>					
II v I		−0.173 (0.06)	−0.191 (0.06)		−0.271 (0.07)
III v I		−0.464 (0.06)	−0.451 (0.06)		−0.205 (0.06)
IV v I		−0.470 (0.11)	−0.461 (0.11)		−0.276 (0.12)
V v I		−0.824 (0.11)	−0.781 (0.11)		−0.561 (0.13)
VI v I		−0.726 (0.09)	−0.690 (0.09)		−0.471 (0.10)
VII v I		−0.855 (0.07)	−0.806 (0.07)		−0.475 (0.07)
<i>Effort logit</i>					
II v I			0.031 (0.01)		0.017 (0.02)
III v I			−0.025 (0.01)		0.016 (0.01)
IV v I			−0.018 (0.03)		0.013 (0.03)
V v I			−0.067 (0.03)		0.028 (0.03)
VI v I			−0.061 (0.02)		0.022 (0.02)
VII v I			−0.080 (0.01)		0.026 (0.02)
<i>Education logit</i>					
II v I				0.150 (0.06)	0.228 (0.07)
III v I				−0.784 (0.06)	−0.744 (0.07)
IV v I				−0.639 (0.12)	−0.560 (0.14)
V v I				−1.003 (0.13)	−0.700 (0.15)
VI v I				−0.945 (0.11)	−0.710 (0.12)
VII v I				−1.323 (0.08)	−1.055 (0.08)

*Note.* \* For ease of presentation the ability parameters reported here have been multiplied by 10. Thus, the effect of an individual’s ability on any particular logit is equal to the reported parameter multiplied by ability divided by 10.



statistically significant, but the addition of ability improves the fit of the models, as the decline in the log-likelihood statistic between columns (1) and (2) shows; and a further improvement is likewise apparent when in column (3) effort is also included. Furthermore, almost all of the ability and effort coefficients in columns (2) and (3) of the tables are statistically significant, indicating that the log-odds of being found in any other class relative to being found in Class I do, in part, depend on ability and effort. However, it is important to recognize that in evaluating the meritocracy thesis we need to focus not on the magnitude of the effects of the 'merit' variables in each model but rather on the change in the levels parameters in Tables IV and V as we move from column (1) to – for Saunders' version of the thesis – column (3). It is the extent of this change that tells us how far the original association between class origins and destinations can be accounted for in terms of merit, as Saunders would understand it.

To begin with the results for men, what we in fact find is that, while there is some reduction in the levels parameters as between columns (1) and (3), this is rather variable and could not in any instance be described as more than modest. In other words, even when we control for both ability and effort, as best we believe they can be measured within the NCDS data-set, substantial inequalities in class mobility chances are still clearly in evidence. The parameters that decline most are those for levels 5 and 6. But when we consider related odds ratios, these reveal that wide inequalities persist. Thus, we saw previously that, under our original topological model, the odds ratio for relative mobility chances as between Class I and Class VII was 20.7. When individual ability and effort are introduced into this model, it can then be calculated – using the relevant levels parameters from column (3) of Table IV – that this odds ratio is still 11.1.<sup>15</sup> And with many other odds ratios, controlling for ability and effort has little or no effect at all. For example, the odds ratio for relative mobility chances as between Class I and Class IV (the petty bourgeoisie) declines only from 7.7 to 6.4; and that for relative mobility chances as between Class I and Class II (the lower service class) stays unaltered at 1.7.

Turning to the results for women, it can be seen from Table V that not only do the original levels parameters in column (1) imply less inequality in mobility chances than among men but, further, that the reduction in these parameters as one moves to column (3) is greater and more consistent.<sup>16</sup> None the less, it is again evident from the parameters in column (3) that such inequality is far from being eliminated when 'merit' variables are brought into the analysis, and in various instances it remains considerable. Thus, the odds ratio for relative mobility chances as between Class I and Class VII is, under our original model, 16.3, and is still 6.3 after ability and effort have been taken into account.

We may next consider the effects on the levels parameters of including individuals' educational qualifications in our mobility table models. By reference to column (4) in Tables IV and V, it is in fact at once apparent that these effects are stronger than those that follow from the inclusion of

ability and effort. For both men and women alike, the levels parameters reported in column (4) are all somewhat closer to zero than those reported in column (3) – although it should also be noted that these parameters remain in all cases both statistically significant and substantively important.<sup>17</sup> Moreover, the effects of then including ability and effort *in addition* to educational qualifications, as shown in column (5), turn out to be for the most part very slight. Indeed, in the case of women, the coefficients for effort, once education is controlled for, are not significantly different from zero. The levels parameters for men and women alike show noticeable, though still very modest, reductions, as compared with those of column (4), only at levels 4 and 5.

From these results we may then conclude that educational qualifications play a clearly more important role in mediating class inequalities in mobility chances than do ability and effort; and, further, that such effects as the latter may have operated very largely *through* educational qualifications. Saunders, as we have noted, would regard educational attainment as being a ‘hopeless’ indicator of merit as he would understand it. It may, however, be said that where merit is measured by education, the meritocracy thesis does at all events show up less badly against the empirical evidence than in the version that Saunders would favour.

Finally, though, it must be emphasized that in Tables IV and V alike the levels parameters that are reported in column (5), where all three possible ‘merit’ variables are controlled, are still some way from zero. There is a far from negligible part of the association between class origins and class position as at age 33 that is not attributable to merit in terms of ability, effort *or* educational attainment – or at least not as we can here represent these variables in our analyses. In other words, there are processes creating class inequalities in mobility chances that cannot be given a ‘meritocratic’ legitimation of any kind that has so far been suggested.<sup>18</sup>

#### HOW MUCH MERITOCRACY?

The foregoing results thus serve to undermine Saunders’ more ambitious claims to the effect that it is ability and effort that primarily determine where individuals end up within the British class structure. However, Saunders does at various points (e.g. 1996: 2; 1997: 282) put his case in a clearly weaker form, arguing simply that British society is ‘more meritocratic’ than has often been supposed. Such an argument is in its nature difficult to test – at all events if we are not told just who has been supposing what – and can easily lead to disputes of a quite futile kind. Is the glass half full or half empty? However, it is possible to treat the question of the *degree* of meritocracy that prevails in a more satisfactory way than does Saunders: that is, by resort to counterfactual analysis. It is a further advantage of the analytical approach that we have pursued in the previous section that it leads on readily to such analysis.

Given that we know the marginal distributions of a mobility table and that we can specify a pattern of association between origins and destinations – as, say, through a set of levels parameters – we can then generate the expected cell frequencies of the table by using the Deming–Stephan algorithm. Thus, we can take the marginal distributions of our mobility tables for men and women, as given in Table I, together with the levels parameters found in column (3) of Tables IV and V respectively, and on this basis produce counterfactual mobility tables of some theoretical interest. The levels parameters in question indicate the extent of class inequality in mobility chances that persists once merit, in the sense of ability and effort, has been taken into account. A table whose odds ratios are functions of these parameters will therefore display only this ‘residual’ inequality, and will show us what absolute rates of class mobility among our NCDS respondents would look like if only this inequality were at work. We can then compare these counterfactual tables, on the one hand, with the actually observed mobility tables and with these tables as we have modelled them and, on the other hand, with the situation of perfect mobility. If modern Britain is indeed a true meritocracy, on Saunders’ definition, then the counterfactual tables should be clearly different from the observed tables or our modelling of them and very close to perfect mobility expectations; for the effects of ability and effort have been allowed for and only *ex hypothesi* negligible class effects remain.

In Table VI we show, for both men and women, percentage outflow distributions from our observed, modelled and counterfactual tables. We also show the percentage column marginal distribution for these tables. Under perfect mobility, this distribution would be replicated as the outflow distribution from each class of origin alike.

The close similarity in the percentage outflow distributions for the tables as observed and as modelled is not of course surprising since we have accepted rather well-fitting models. The important result is the further similarity between these outflows and those for the counterfactual tables. Although the latter tables do tend to show lower percentages in cells on the main diagonal, indicating, that is, lower intergenerational stability in class position, and also higher percentages in cells indicating long-range intergenerational mobility, the differences are in all instances quite small. In contrast, if one compares the outflow distributions of the counterfactual tables with the baseline of perfect mobility, provided by the column marginal distributions given at the foot of Table VI, substantial differences – indicative of persisting class inequalities in mobility chances – are widely apparent. Only the outflows from Classes III and V (those of routine non-manual employees and of lower-grade technicians and supervisors of manual workers) show no notable departures from perfect mobility expectations – which is, however, also the case in the observed and modelled tables.

In sum, the clear implication is that meritocratic selection by ability and effort, as it operates in modern British society, mitigates the influence of

TABLE VI: *Percentage outflow distributions from observed (top row), modelled (middle row) and counterfactual (bottom row) tables*

Origin class	Destination class at age 33													
	Men							Women						
	I	II	III	IV	V	VI	VII	I	II	III	IV	V	VI	VII
I	48	24	6	5	5	7	4	16	35	40	2	1	2	5
	51	21	5	7	4	6	4	16	35	41	3	1	2	5
	47	20	6	7	5	9	7	14	29	42	3	2	2	9
II	32	24	8	7	6	13	9	17	28	38	2	1	3	11
	34	24	6	6	6	13	11	15	30	38	2	2	2	11
	32	23	6	6	6	15	12	14	27	39	2	2	3	14
III	26	17	12	6	6	19	13	10	19	51	2	0	1	17
	23	16	11	7	7	19	15	9	18	53	2	2	3	14
	23	16	11	7	7	19	16	9	19	50	2	2	3	15
IV	19	12	6	26	5	20	12	9	15	50	5	2	5	14
	21	14	6	21	6	17	14	11	21	42	4	2	3	17
	21	15	6	19	6	18	14	11	21	42	3	2	4	17
V	27	12	7	8	9	19	18	9	22	45	1	2	3	18
	23	16	7	7	8	24	15	11	21	42	2	2	5	17
	23	16	7	7	8	23	16	11	21	42	3	2	4	17
VI	17	15	7	6	7	25	22	7	19	41	2	3	4	24
	16	14	8	8	8	26	20	6	17	44	2	2	5	23
	18	15	8	8	8	24	19	8	18	43	2	2	4	22
VII	14	11	4	7	8	26	30	6	13	40	3	3	6	29
	14	13	7	7	7	22	30	6	15	39	2	2	4	31
	17	14	7	7	7	22	27	7	17	40	2	2	4	27
All	25	17	7	8	7	19	17	10	22	42	2	2	4	18

class to only a very limited degree. On this basis, it is then difficult to see, *pace* Saunders, just how the degree of meritocracy that underlies class mobility processes could have been underestimated in any serious way.

CONCLUSION

Our initial critique of Saunders’ recent attempts to provide class inequalities in mobility chances with a meritocratic legitimization has now been

backed up with an alternative analysis of the NCDS data-set which leads to a very different view of the openness and indeed 'fairness' of British society. The emphasis that has been given in the British tradition of social mobility research to class-linked restrictions on a genuine equality of opportunity would appear to be entirely justified.

In this concluding section of our paper there is, however, one further question that we need to address: namely, that of why our findings should appear to differ so radically from those that Saunders has presented. If we are unable to respond adequately to this question, the suspicion may well arise that little more is involved here than quantitative sociologists deploying complex techniques, by means of which they can demonstrate more or less anything they wish.

There are indeed a number of factors that we have previously noted that could – and, we would believe, to some extent do – account for divergences between the results of Saunders' analyses and of our own. To begin with, we take a wider and in turn a probably more representative coverage of NCDS respondents than does Saunders by including in our analyses those who were not in employment when interviewed at age 33. Again, we use a more refined and better validated measure of social class, and we also drop several measures of both ability and effort which Saunders uses but which we would regard, for reasons we have given, as being inappropriate to the purposes in hand. In these ways, we believe that we have corrected various biases in favour of the meritocracy thesis that Saunders introduced. And then, in actually testing this thesis, we follow a more direct – and also technically less problematic – approach than that of the causal path analysis to which Saunders ultimately resorts.

At the same time, though, what has also to be pointed out is that the contrast between our findings and Saunders' on the central issue of meritocracy proves, on closer examination, to be not so striking as it may initially seem. The position that we reach on the part played by merit in mobility processes is clearly contrary to that which Saunders *believes* to follow from his empirical work. But our position can in fact also be supported by results that Saunders himself reports – the full significance of which has, we may suppose, eluded him.

It is clear from our own analyses that mobility chances are indeed influenced by ability and effort, and in turn it follows that merit, understood in terms of ability and effort, may in some cases enable individuals to overcome the disadvantages of their class origins. But what is also shown is that merit can operate in the way it does without the effects of class being thereby annulled, or even much reduced. The important implication of our findings here – and one which resolves any apparent contradiction – is that while merit certainly counts in mobility processes, children of disadvantaged class origins have to display *far more merit* than do children of more advantaged origins in order to attain similar class positions. Now in Saunders' own work there are results reported that point in just this same direction.

Most notably, perhaps, in examining the relative importance of various factors in determining (male) respondents' HG scores at age 33, Saunders reports the beta coefficients for each variable in a multiple regression model (1996: Table 8; 1997: Table 6).<sup>19</sup> From this and other information available, it is then possible to calculate the additional amounts of merit that would be required, under his model, in order to compensate for less advantaged class origins – and these prove to be quite substantial. Thus, in regard to ability, as measured by the General Ability Test, it turns out that children of working-class (i.e. RG Class IV/V) origins would need to out-perform children of middle-class (i.e. RG Class I/II) origins by roughly one standard deviation of this measure – or, that is, by 15 points on the 80 point scale – in order to have the same expected HG score, all other differences being held constant.<sup>20</sup> And a similar calculation can be made in regard to effort as measured by the Academic Motivation Scale. In other words, one can, from Saunders' own analyses, derive results that lead to the same conclusion as our own: namely, that while merit is of value in mobility processes, its effects operate alongside – and cannot account for – substantial class inequalities in these processes. This in turn means that the rewards that accrue to merit themselves vary depending on the class origins of those who possess it. If this makes Britain a meritocracy, it is then one of a very peculiar kind.<sup>21</sup>

The main claim we would advance for this paper is that it shows up fundamental – we would say, fatal – flaws in Saunders' efforts to represent modern British society as being 'unequal but fair': the attempt at a meritocratic legitimation of class inequalities clearly fails.<sup>22</sup> None the less, we would, to end with, wish again to stress the points we earlier made about the difficulties, above all ones of measurement, that arise in assessing the relative importance of different factors involved in mobility processes and, more particularly, about the limitations of the NCDS data-set in evaluating the meritocracy thesis. Thus, while we would not believe that this thesis, as construed by Saunders, could in any way be shown to apply to modern Britain, we would accept that with better measures of ability and, especially, of effort than those available from the NCDS data-set, the influence of merit could well appear greater than in the results we have presented – just as a better measure of class origins than that provided by the SEG approximation to the Goldthorpe schema would be likely to work in the opposite direction.

In our view, these difficulties in regard to choice of indicators and measures could best be handled in further consideration of the meritocracy thesis by extending empirical analyses to data from more than one birth cohort. In its most plausible version, this thesis is in fact expressed in tendential form – in effect as another way of stating the thesis of the growing ascendancy of criteria of achievement over criteria of ascription in social selection (cf. Blau and Duncan 1967; Treiman 1970; Treiman and Ganzeboom 1990). And in this form it is, at least in principle, open to test with greater refinement and reliability in that one could compare the experience of individuals across cohorts, *holding constant* the measurement of the

key variables involved, and thus see whether 'merit' variables as measured are, or are not, *becoming relatively more important over time*. In the British case, it may be possible to approximate such a strategy by exploiting the NCDS data-set together with that of the British Cohort Study 1970. We are currently exploring this possibility in the interests of moving the discussion of meritocracy onto more secure and productive lines.

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## NOTES

1. We are grateful to Samuel Bowles, David Firth, Gordon Marshall, Peter Saunders, Adam Swift and an anonymous referee for helpful comments on earlier drafts of this paper.

2. An odds ratio is simply the product of two complementary disparity ratios of the kind referred to in the text (Goldthorpe 1987: 88, n. 17).

3. For example, Saunders notes that for NCDS respondents the disparity ratio expressing the relative chances of those of middle-class and of working-class origins being found in middle-class positions (at age 33 in 1991) is around 2:1. Since the (very loosely) corresponding figure derived from Goldthorpe's 1972 data was 4:1, and from his 1983 data, nearer to 3:1, Saunders then suggests (1996: 49) that 'the increased social fluidity discovered by John Goldthorpe between 1972 and 1983 has continued to rise into the 1990s'. But of course Goldthorpe discovered nothing of the kind. His finding was of *unchanged* social fluidity: i.e. relative rates, as measured by odds ratios, were not significantly different in the mobility tables for the two dates (1987: 258–61 and Table 9.4 esp.). What Saunders fails to observe is that while the disparity ratio to which he refers did indeed narrow as he reports, the

disparity ratio *that is the complement to it* – i.e. that referring to the relative chances of individuals of middle- and working-class origins being found in *working-class* positions – offsettingly widened, from 1:4 in 1972 to around 1:5 in 1983. In other words, Saunders' refusal to think in terms of odds ratios leads him to claim evidence of greater social fluidity, regardless of the fact that class origins became more strongly linked with the chances, or risks, of individuals ending up in the least desirable class positions – and ones which by the 1980s, had become still less desirable since they increasingly carried the further risk of unemployment.

4. It should be noted that Saunders' measure of ability here is not IQ; see further pp. 9–10 and n. 10 below.

5. This is quite apart from more specific problems with causal path analysis, and especially as used in conjunction with 'measurement models'. See the forceful critique by Freedman, and subsequent discussion, in Shaffer (ed.) (1992).

6. It is important to recognize that these issues are not primarily ones of the *reliability* of measures, such as might be addressed through measurement models, but rather of their (criterion) validity or, in other words, of how well they capture what,

conceptually, they are supposed to capture.

7. We recognize – indeed, we insist upon – the difficulties that are created with the kinds of analytical technique that Saunders favours where there are good theoretical reasons for treating some variables as continuous and others, such as class, as categorical. But if resort is to be made to these techniques, it would at all events seem essential that categorical variables, rather than being merely transformed into restricted-range continuous ones, should be represented in the analysis in as refined a way as possible.

8. We acknowledge in this connection access to the data-set via The Data Archive, the University of Essex; and also the help of the NCDS Support Unit at City University and of Jane Roberts of the Computing Unit, Social Studies Faculty Centre, University of Oxford.

9. We note that users of the NCDS data-set tend not to attempt the replication of analyses carried out by others as a starting point for their own work on similar or related topics. Part of the difficulty here may be the very complex nature of the data-set but it is also the case that not all analysts – and Saunders is an example – identify the variables they have used by their reference numbers in the official NCDS data dictionary. This should be standard practice. On the matter of attrition, more work is clearly needed aimed at estimating its effects. What is clearly undesirable is to adopt, as Saunders does, merely *ad hoc* procedures to deal with missing data (such as replacing missing values of a variable with the mean of the variable) since these are likely to introduce additional biases. Data weighting is a more soundly based approach to the problem but we have ourselves been investigating the possibilities of applying ‘multiple imputation’ and related techniques in order to investigate the extent to which the ‘mechanisms’ producing missing data are, or are not, ignorable (cf. Rubin 1987; Vermunt 1997: 70–81).

10. We should emphasize that we do not believe that the General Ability Test can be regarded as measuring primarily ‘innate’ cognitive ability; but then, in contrast to Saunders, we do not believe that

standard IQ tests do this either. For our present purposes, however, we need not enter into the debate on this issue – although we think it is one that Saunders should re-read as it has developed after the publication of *The Bell Curve* (Herrnstein and Murray 1994) and with special attention to Fischer *et al.* 1996: chs. 2 and 3). In what follows, we shall refer to ability rather than to intelligence or IQ. It seems that in some of his analyses Saunders may also measure academic ability on the basis of teachers’ ratings. If so, this could be thought questionable on the grounds that these ratings might reflect children’s class backgrounds as well as their ability or actual attainment (cf. Kerckhoff 1990: ch. 4).

11. Again, we cannot be entirely sure about Saunders’ procedures here since what is said in his published work seems not entirely consistent with what is said in an unpublished paper (with Rod Bond) which explains his causal path analysis in greater detail. And, as earlier noted, Saunders does not give NCDS data dictionary references for the variables he uses.

12. Once more we find it difficult to establish the precise procedures that Saunders follows.

13. In addition, the III–III and VII–VII cells, i.e. those indicative of intergenerational stability within the routine nonmanual class and nonskilled working class, respectively, were put, together with the II–II cell, at the new level 2.

14. We use Class I as the reference category only in accordance with convention. The log odds of being in any one rather than another destination class are all functions of the parameters reported in Tables IV and V. The levels parameters can also be interpreted as showing the effects of origin class on the various log odds, albeit constrained to take particular relative values.

15. It should be noted that such odds ratios are likely to have rather large standard errors. Citing them is intended to serve a primarily illustrative purpose and no great weight should attach to their precise values. What is of chief substantive importance is of course the extent and direction of change in the entire set of odds ratios underlying the mobility table –



which is best indicated by change in the levels parameters.

16. Why the women's mobility table should display more fluidity than the men's – and to a greater degree than in most cross-sectional studies of national populations – and why ability and effort should reduce class inequalities in women's relative mobility chances more than in men's are both issues that would repay further enquiry. On the first point, we would believe that part of the explanation at least will turn on the fact that at age 33 many women will still be in their period of 'active motherhood' and that determining their class position by reference to their own employment is at this stage likely to be especially problematic.

17. This confirms the findings of previous attempts at testing the meritocracy thesis where educational attainment is taken to be indicative of merit, notably those of Heath, Mills and Roberts (1992) and Marshall, Swift and Roberts (1997).

18. We should make it clear that these results owe nothing to our decision to capture the association between origins and destinations by using topological models. In this way we gain in parsimony and thus in ease of presentation. But essentially the same results on the persistence of this association when 'merit' variables are introduced would in fact be obtained if we were instead to use the saturated models for our two mobility tables. We should also add that we fitted to our data a range of models that included various two-way interactions between ability, effort and class origins (e.g. allowing the effects of ability on class destination to vary according to class origins or to effort) and further the three-way interaction term. However, in no case were these more complex effects found to be statistically significant. The detailed results are available on request.

19. The beta coefficient is the OLS partial regression coefficient standardized by multiplying it by the ratio of the variable's standard deviation to the standard deviation of the HG scores.

20. To calculate this result, it is necessary to know that the standard deviation of the class origin variable is 0.66, of the HG scores, 16, and of the measure of ability, 15.

Then the difference in expected HG score between respondents of (RG) Class I/II origin and those of Class IV/V origin (holding all else constant) is given by the difference between their origin class in standard deviation units, which is  $(3 - 1)/0.66 = 3$ , multiplied by the standard deviation of the HG scores and by the beta reported by Saunders (1997: Table 6) which is equal to  $-0.08$ . One thus has  $3 \times 16 \times -0.08 = -3.84$ . One can then ask: what ability difference gives rise to a difference in HG score of 3.84? The answer is roughly one standard deviation. This is because the beta for ability is 0.25, which means that a standard deviation (or 15-point) change in ability is equal to a change of 0.25 standard deviations, or 4 points, on the HG measure.

21. It is relevant to add that the conclusions we here reach are in general far more consonant than are Saunders' own with those of other analysts of the NCDS data-set who have addressed issues of the relation between class origins, ability, educational attainment etc. See e.g. Micklewright (1989) and Kerckhoff (1990, 1993). Saunders' disregard of such earlier analyses is conspicuous.

22. That is to say, it fails in that the empirical basis that it claims is invalidated. It is of course a quite separate matter, and one into which we do not here enter, whether such a legitimization would be ideologically compelling *even if it had an adequate empirical grounding* (cf. Goldthorpe 1996; Marshall, Swift and Roberts 1997: ch. 8 esp.).

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