

# Income and Class Mobility between Generations in Great Britain: The Problem of Divergent Findings from the Data-Sets of Birth Cohort Studies

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**INCOME AND CLASS MOBILITY BETWEEN GENERATIONS IN GREAT BRITAIN:  
THE PROBLEM OF DIVERGENT FINDINGS FROM THE DATA-SETS OF BIRTH  
COHORT STUDIES**

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**INCOME AND CLASS MOBILITY BETWEEN GENERATIONS IN GREAT BRITAIN:  
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*Abstract:* Social mobility has become a topic of central political concern. In political and also media circles it is widely believed that in Britain today mobility is in decline. However, this belief appears to be based on a single piece of research by economists that is in fact concerned with intergenerational income mobility: specifically, with the relation between family income and children's later earnings. Research by sociologists using the same data sources - the British birth cohort studies of 1958 and 1970 - but focusing on intergenerational class mobility does not reveal a declining trend either in total mobility rates or in underlying social fluidity. The paper aims to investigate these divergent findings. It is shown that they do not result from the use of different subsets of the data or of different analytical techniques. What is, rather, emphasised is that, as against the background of the more stable and generally less fluid class mobility regime, it is the high level of income mobility of 1958 cohort, rather than the lower level of the 1970 cohort, that is chiefly in need of explanation. Further analyses - including ones of the relative influence of parental class and of family income on children's educational attainment - suggest that the economists' finding of declining mobility between the two cohorts may stem, in part at least, from the fact that the family income variable for the 1958 cohort provides a less adequate measure of 'permanent income' than does that for the 1970 cohort. But, in any event, it would appear that the class mobility regime more fully captures the continuity in economic advantage and disadvantage that persists across generations.

*Keywords:* intergenerational mobility, class, family income, class mobility, income mobility, educational attainment.

## Introduction

In a previous paper in this journal, Goldthorpe and Jackson (2007: 525) note that 'In Britain in recent years social mobility has become a topic of central political concern.' This observation still holds good. Indeed, political interest in social mobility has, if anything, intensified. The government has published a White Paper, *New Opportunities: Fair Chances for the Future* (HM Government, 2009) reviewing current evidence on mobility in Britain and outlining a range of policies aimed at promoting it. In anticipation, the Conservatives brought out *Through the Glass Ceiling: A Conservative Agenda for Social Mobility* (Conservative Party, 2008). And the Liberal Democrats established an Independent Commission on Social Mobility which has now issued a lengthy *Report* (2009). Media coverage of, and commentary on, these publications has been extensive.

Goldthorpe and Jackson further note that across the political spectrum and within the media it is widely believed that social mobility in Britain, as viewed in an intergenerational perspective, is presently in decline. However, they point out that this belief appears to be based on a single piece of research, undertaken by a group of labour economists (Blanden *et al.*, 2004), and that this research is in fact concerned with intergenerational *income* mobility rather than with social mobility as usually understood by sociologists - or, it would seem, by most politicians. The main purpose of Goldthorpe and Jackson's paper is then to show that if mobility is examined, using the same data sources as the economists but in terms of intergenerational movement between social class positions, a different picture emerges. There is no indication of any current downturn in the total mobility rate and at the level of relative rates, or, that is, of underlying social fluidity, the evidence points to a continuation of the essential stability that has been documented for several decades previously (Goldthorpe, 1987; Goldthorpe and Mills, 2004).

The concern of the present paper is with these divergent findings. Intergenerational income mobility and intergenerational class mobility are of course different phenomena,

and there is no *a priori* reason why they should change in tandem (cf. Björklund and Jäntti, 2000). None the less, the question of why the one should appear to be declining while the other does not is of evident interest - not only in regard to current political debates but also of course in regard to a number of more academic issues. Is one to conclude that the relationship between income and class is itself changing? And, if so, what are then the wider implications for the way in which family background conditions children's life-chances? Is family income becoming more consequential than class or *vice versa*? Or could it be that the findings reported, rather than reflecting a changing social reality, are no more than a methodological artefact, resulting from the differing data problems faced by researchers seeking to investigate income and class mobility and/or from their differing analytical approaches? These are the main issues that we seek here to address.<sup>2</sup> We begin with problems of data since, as will become apparent, they are essential background to all that follows.

### **Problems of data**

The data-sets used by the economists and in turn by Goldthorpe and Jackson are those provided by the two major British birth-cohort studies: the National Child Development Study (NCDS), which aims to cover all children born in one week in 1958, and the British Cohort Study 1970 (BCS), which aims to cover all children born in one week in 1970. It should be noted at the outset that far more difficult problems arise in using these data-sets for the study of income mobility than for the study of class mobility. The cohort studies, it would be fair to say, were not designed and developed with the interests of economists chiefly in mind.

Blanden *et al.* (2004) are concerned with the relationship between the level of *family income*, as reported by the parents of children in the two cohorts at their child's age 16 (i.e. in 1974 for the earlier cohort and in 1986 for the later cohort), and the *individual*

*earnings* of these children when they had reached age 33 in the earlier cohort (i.e. in 1991) and age 30 in the later cohort (i.e. in 2000). What they find is that for both men and women alike the association between individual earnings and family income is stronger in the 1970 cohort than in the 1958 cohort. In intergenerational transition tables based on income quartiles or quintiles, significantly more cases fall in cells on, or adjacent to, the main diagonal in the tables for the later cohort than in those for the earlier cohort - or, in other words, mobility is at a lower level.<sup>3</sup> However, in order to arrive at this position, Blanden *et al.* have to deal, as best they can, with a whole series of shortcomings in the data available to them.

First, in the NCDS and BCS data-sets the extent of missing - or reportedly missing<sup>4</sup> - data on family income and respondent's earnings is unfortunately large, far larger in fact than in the case of data on father's class and respondent's class. In addition, in both data-sets, the earnings data for self-employed respondents appear to be of very low quality, and Blanden *et al.* therefore decide to exclude these respondents from their analyses.

Second, a multifaceted problem arises in obtaining similar family income measures for children in the two cohorts. The BCS provides information on *total* family income at child's age 16 but the NCDS data-set contains no comparable variable. Blanden *et al.* have therefore to construct such a variable by the addition of father's earnings, mother's earnings and 'other family income', all of which the NCDS records separately. But even then the matching with the BCS family income measure is still only approximate. Parents of NCDS children were explicitly asked to include child benefits in 'other family income', while parents of BCS children were asked to discount such benefits in estimating their total family income. Blanden *et al.* need therefore to modify the BCS variable by adding in a value for child benefit imputed from the number of the children in the household (and lone parent status). Further, in the NCDS all income is reported net of tax but in the BCS total family income is reported gross. Blanden *et al.* have thus to estimate net equivalents through the use of Family Expenditure Survey data for the appropriate year (1986), where

family incomes are available both net and gross. And finally, while the constructed NCDS family income variable generates 77 income categories, the BCS family income variable has only 11. To compensate for this, Blanden *et al.* use maximum likelihood estimation to model a continuous Singh-Maddala (1976) distribution for the BCS data.<sup>5</sup>

Third, the limitations of both the NCDS and BCS data-sets mean that in their mobility analyses Blanden *et al.* have to rely on only 'one-shot' measures of both family income and children's earnings. At least since the work of Solon (1992) and Zimmerman (1992), it has been recognised that analyses based on such measures will in fact tend to overestimate the extent of intergenerational income mobility as a result of the undue weight thus given to transitory components of income uncorrelated with underlying 'permanent income' (see also Bowles, Gintis and Groves eds., 2005). Blanden *et al.* fully recognise this point (see esp. 2004: 133-8), and note that the estimates of intergenerational income elasticities that they produce (cf. n. 1 ) are well below the 0.4 'consensus' that has emerged from research using the time-averaging of multiple income observations. They argue, however, that as regards their claim of declining mobility between the two birth cohorts, the crucial issue is that of whether there are any grounds for supposing that error resulting from one-shot measures is substantially greater for the 1958 than for the 1970 cohort, and they do not believe that this is the case.

In contrast, the problems that arise in using the NCDS and BCS data-sets in the analysis of intergenerational class mobility appear rather minor. As Goldthorpe and Jackson indicate (2007: 529-30), some difficulties occur in applying a uniform version of the Goldthorpe class schema (Goldthorpe, 1987, 2007, vol. 2, ch. 5) to children and their fathers in the two cohorts but it still appears possible to apply a seven-class version of the schema in a reasonably reliable way in constructing standard mobility tables. These tables relate father's class at child's age 11, for the earlier cohort, and at age 10 for the later cohort, to children's own class positions at age 33 or age 30, respectively. It is on this basis that Goldthorpe and Jackson show that for both men and women total mobility is

little changed across the cohorts (although, for men, upward mobility significantly decreases while downward mobility significantly increases) while relative rates, which are the more comparable with the rates of mobility between quartile or quintile income positions considered by Blanden *et al.*, appear essentially unchanged.

From the foregoing it is then evident enough that the divergence in findings on income and class mobility could well be, for one reason or another, a methodological artefact at least in some part, and this possibility we need therefore to test as far as we are able.

### **Income and class mobility re-examined**

To begin with, we consider whether differences in findings may arise from the problems of missing or unusable income data that the economists encounter. As a result of these problems, it should be noted, the mobility tables analysed by Blanden *et al.* have Ns substantially smaller - by around 40-45 per cent - than those used by Goldthorpe and Jackson. To this end, we carry out analyses with the same data-files as were used by Blanden *et al.* in studying income mobility and by Goldthorpe and Jackson in studying class mobility, from which, however, we delete the cases of all individuals who cannot be included, because of missing data, in *both* income *and* class mobility tables. Respondents, who can be included in both kinds of table, number 3256 (1767 men and 1489 women) from the NCDS and 3168 (1648 men and 1520 women) from the BCS.

To then facilitate comparisons between income and class mobility, we construct in each case 5 x 5 transition tables. In the former case, these tables relate the quintile position of family income at child's age 16 to the quintile position of child's own earnings at age 33 or 30.<sup>6</sup> In the latter case, they relate father's class at child's age 11 or 10 to child's own class position at age 33 or 30, with class being treated on the basis of a fivefold collapse

of the same version of the Goldthorpe schema (though omitting self-employed workers) as used by Goldthorpe and Jackson, and as shown in Table I.

[Table I here]

With the income and class mobility tables thus formed (raw counts are available from the authors on request), we carry out a fairly standard modelling exercise on the following lines. Taking corresponding tables for the 1958 and 1970 cohorts for men and women separately, we first of all fit, as baseline, the loglinear model that proposes independence of origins and destinations: that is, of family income and child's earnings, and of father's class and child's class, respectively. This model - the model in effect of 'perfect mobility' in which all odds ratios defining the net association between origins and destinations equal 1 - can be written as

$$\log F_{ijk} = \mu + \lambda_i^O + \lambda_j^D + \lambda_k^C + \lambda_{ik}^{OC} + \lambda_{jk}^{DC} \quad (1)$$

where  $F_{ijk}$  is the expected frequency in cell  $ijk$  of a three-way table comprising origin (O), destination (D) and birth cohort (C) and, on the right-hand side of the equation,  $\mu$  is a scale factor,  $\lambda_i^O$ ,  $\lambda_j^D$ ,  $\lambda_k^C$  represent the main effects of the distributions of individuals over origins, destinations and cohorts and the remaining terms refer to corresponding associations.

Next, we fit the further loglinear model that, while recognising an association between origins and destinations (net of marginal effects), states that the odds ratios defining this association - or, that is, rates of relative mobility - do not change from one cohort to the other. This model, known as the constant social fluidity (CSF) model, can be written as

$$\log F_{ijk} = \mu + \lambda_i^O + \lambda_j^D + \lambda_k^C + \lambda_{ik}^{OC} + \lambda_{jk}^{DC} + \lambda_{ij}^{OD} \quad (2)$$

- i.e. the further two-way association  $\lambda_i^{OD}$  is added to (1) (but not the one possible three-way association implying change in the association between origins and destinations across the two cohorts – and which would in fact saturate the model).

Then, finally, we fit a logmultiplicative model, the UNIDIFF model (Erikson and Goldthorpe, 1992), which we write as

$$\log F_{ijk} = \mu + \lambda_i^O + \lambda_j^D + \lambda_k^C + \lambda_{ik}^{OC} + \lambda_{jk}^{DC} + \beta_k X_{ij} \quad (3)$$

where  $X_{ij}$  represents the general pattern of the origins-destination association and  $\beta_k$  the relative strength of this association that is specific to a cohort. This latter model thus tests for the possibility that from the 1958 to the 1970 cohort the log odds ratios defining the origins-destinations association increase or decrease by some common factor; or, in other words, for the possibility that relative rates become more or less unequal, implying either a uniform fall or rise in social fluidity within the class structure. The results obtained from our modelling exercise are shown in Tables II and III.<sup>7</sup>

[Tables II and III here]

A first point of interest is that in the case of the independence model the  $G^2$ s returned for both men and women are substantially larger for class mobility than for income mobility, thus suggesting that a stronger intergenerational association exists between class position than between quintile income position. This is a point to which we return in the following section.

Secondly, as regards income mobility, the hypothesis of constant social fluidity appears problematic for both men and women. Although for men - but not for women - the CSF model does give an acceptable fit to the data, in both cases alike the UNIDIFF model significantly improves upon it. The UNIDIFF parameters ( $\beta$ s), in being greater than 1, indicate that from the 1958 to the 1970 cohort all odds ratios defining the association

between family income and children's earnings *increase* in a uniform way and, it may be added, by factors that for both men and women are remarkably large given that the two cohorts are only twelve years apart - far larger than those (if any) that tend to show up in class mobility analyses extending over several decades.<sup>8</sup> Although, then, arrived at through a different methodology, this result is fully consistent with that which, as we have noted, is reported by Blanden *et al.* (2004) on the basis of tables covering all respondents for whom adequate income information could be obtained (and including, therefore, a small number whom we here exclude since information on either their father's or their own class is not available).

Thirdly, though, so far as class position is concerned, the hypothesis that intergenerational social fluidity is constant across the two cohorts cannot be rejected for either men or women, and in neither case does the UNIDIFF model improve significantly on the CSF model. In other words, we here replicate the result obtained by Goldthorpe and Jackson (2007) which was based on tables covering all respondents for whom there was information on class origins and destinations, regardless of the availability of data on income.

We can, therefore, fairly safely conclude that the differing findings on income and class mobility that motivate the present paper are *not* the outcome of the researchers concerned working with different subsets of NCDS and BCS respondents. Their findings can in their essentials be reproduced by analyses that are based on exactly the same subset - i.e. that of respondents who can be included in both income and class mobility tables. Either, then, a methodological artefact is being produced in some other way or it has to be accepted that a real divergence occurs.

### **The relative strength of intergenerational association between class and income**

As a next step in seeking to resolve this issue, we pursue further the indication we obtain from the fits of the independence model in Tables II and III that the association between father's and children's class position is stronger than that between family income and children's earnings.

As a means of so doing, we calculate, for each of our 5x5 table mobility tables, the set of 16 'global' odds ratios, in log form, that can be obtained by their successive partitioning into 2x2 tables. A 5x5 table can be split into 16 2x2 tables by dichotomising the row and column variables at each consecutive dividing line between their categories. Each pair of dichotomised rows and columns defines a four-field table which can be represented as

$$\begin{array}{cc} a & b \\ c & d \end{array}$$

Thus, let  $x_{ij}$  be the number of cases in the  $ij$ th cell of a table, and

$$a_{11} = \sum_{i=1}^1 \sum_{j=1}^1 x_{ij} ; b_{11} = \sum_{i=1}^1 \sum_{j=2}^5 x_{ij} ; c_{11} = \sum_{i=2}^5 \sum_{j=1}^1 x_{ij} ; d_{11} = \sum_{i=2}^5 \sum_{j=2}^5 x_{ij} .$$

Then the log odds ratio<sub>11</sub> =  $\ln(a_{11}d_{11}/b_{11}c_{11})$  - i.e. the log odds ratio resulting from separating the first row and the first column, respectively, from the other categories.

Similarly, if

$$a_{12} = \sum_{i=1}^1 \sum_{j=1}^2 x_{ij} ; b_{12} = \sum_{i=1}^1 \sum_{j=3}^5 x_{ij} ; c_{12} = \sum_{i=2}^5 \sum_{j=1}^2 x_{ij} ; d_{12} = \sum_{i=2}^5 \sum_{j=3}^5 x_{ij}$$

log odds ratio<sub>12</sub> =  $\ln(a_{12}d_{12}/b_{12}c_{12})$  and so on down to

log odds ratio<sub>44</sub> =  $\ln(a_{44}d_{44}/b_{44}c_{44})$

where

$$a_{44} = \sum_{i=1}^4 \sum_{j=1}^4 x_{ij} ; b_{44} = \sum_{i=1}^4 \sum_{j=5}^5 x_{ij} ; c_{44} = \sum_{i=5}^5 \sum_{j=1}^4 x_{ij} ; d_{44} = \sum_{i=5}^5 \sum_{j=5}^5 x_{ij}$$

In Table 4 we give average global log odds ratios for each table in unweighted and weighted<sup>9</sup> form. Two main points emerge.

[Table IV here]

First, with the 1958 cohort, the log odds ratios deriving from the class mobility tables are clearly higher than those deriving from the quintile income mobility tables, for both men and women alike - confirming, that is, a stronger intergenerational association in the case of class than of income. Second, with the 1970 cohort, the difference is far less marked - and especially for men.<sup>10</sup> It could therefore be said that the cross-cohort decrease in intergenerational fluidity as regards quintile income position comes about through such fluidity *moving closer to the lower and essentially constant level that is found in the case of class.*

If, then, one has an interest in establishing the full extent to which differences in economic advantage are intergenerationally transmitted, there is here evidence in favour of focusing on social class rather than on income. Class, treated on the basis of the type of schema we use, can be shown (Goldthorpe and McKnight, 2006; Chan and Goldthorpe, 2007; McGovern *et al.*, 2007) to be rather systematically related not only to current income level but further to economic security (as measured by the risk of long-term or recurrent unemployment), to earnings stability, and to longer-term income prospects. In other words, class position may be a better proxy than simply one-shot measures of current income of the kind that Blanden *et al.* have to use for the concept of 'economic status' to which economists now seem increasingly to resort in discussion of intergenerational mobility (see e.g. Bowles, Gintis and Osborne Groves, 2005; Mayer and Lopoo, 2005; Lee and Solon, 2006; Hertz, 2007).<sup>11</sup>

However, for our present purposes, what is most relevant to observe is that, as against the background of what we know about class mobility, the outstanding feature of the quintile income mobility tables that we analyse is *not* the strength of the intergenerational association that is found for the 1970 cohort but rather the *weakness* of the association - or, that is, the rather remarkably high fluidity - that is found for the 1958 cohort. And in view of the degree of temporal stability that is displayed by social fluidity within the British class structure over the course of the twentieth century (Goldthorpe, 1987; Goldthorpe and Mills, 2004, 2008), it is then this weak linkage between the earnings of children in the 1958 cohort and their family incomes that would appear unusual and most in need of some special explanation, whether as an artefact or otherwise. We now pursue this point further.

### **The relationship between class and income**

The question that most obviously arises from the foregoing is that of the relationship between class and income and of possible changes in this relationship between the 1958 and 1970 birth cohorts. One relatively straightforward way of addressing this question is through analyses of variance of (log) family income on father's class and of child's (log) earnings on child's class. Taking the same subsets of respondents as in the mobility tables previously considered, we obtain the results that are shown in Table V.

[Table V here]

It is apparent that the analyses for the two cohorts do, in one respect, give quite differing results. For both men and women in the 1958 cohort, the association between father's class and family log income - i.e. as of 1974 - is at a relatively low level: father's class accounts for less than 10 per cent of the total variance in such income. However, both for men and women in the 1970 cohort - i.e. as of 1986 - this proportion rises to clearly over

20 per cent. At the same time, though, the association between children's class position and their log earnings shows no tendency to strengthen, that is, as between 1991 and 2000. The proportion of the total variance in their earnings accounted for by their class remains at around 20 per cent for sons and 40 per cent for daughters.

Analysis of variance has the advantage of allowing us to examine the class-income relationship while retaining class as a categorical variable. However, if we are ready to score the five classes that are shown in Table I so as to reflect in some way the relative degree of economic advantage that we would see as being conferred on their members - say, 5 for Class I, 4 for Class II+IVa and so on down to 1 for Class IIIb+VII - then we can also take a correlational approach. Applying this scoring for class, we obtain the correlation matrices for the four variables used in our mobility tables that are shown in Table VI (again taking the same subset of respondents to the NCDS and BCS as represented in these tables).

[Table VI here]

What is most notable about the correlations reported in this table is that, for men and women alike, they are all fairly similar from one cohort to the other *except* where family income is involved. Thus, there is no great change across cohorts in the correlations between father's class and child's class - consistently with the results of our class mobility analyses - or between father's class and child's earnings or between child's class and child's earnings. However, the correlations between family income, on the one hand, and father's class, child's class and child's earnings, on the other, all change and in the same direction: that is, all strengthen markedly from the 1958 cohort to the 1970 cohort. And what is here particularly remarkable are the very low correlations for both men and women in the 1958 cohort between their family incomes and their own earnings -  $r = 0.18$  and  $0.16$  respectively. In fact these correlations are lower than those between their father's class and their own earnings, and in the case of men substantially so. In the 1970 cohort,

this seeming anomaly then disappears. And at the same time, and again for both men and women, the correlation between father's class and family income moves up to a relatively high level.

The main conclusion that we would draw from our analyses of variance and our correlational analyses, taken together with the results reported in preceding sections of the paper, is therefore the following: that in accounting for the differing findings on income and class mobility across the two birth cohorts, crucial significance must attach in the analyses reported by Blanden *et al.* to the family income variable and especially for the 1958 cohort - a rather elaborately constructed variable, as earlier described. It is the weakness of the association between family income and children's earnings in the 1958 cohort, rather than the strength of this association in the 1970 cohort, that appears generally out of line with all other indications of the degree of intergenerational transmission of economic advantage and disadvantage.

### **Income, class and education**

To pursue the concern of the last paragraph somewhat further, it is relevant also to consider the relationships existing between family income and father's class, on the one hand, and, on the other, children's educational attainment. Blanden and her colleagues, it may be noted, see it as a key factor in declining intergenerational income mobility that children from higher income families have benefited disproportionately from educational expansion from the 1970s onwards (Blanden *et al.*, 2004: 138-43; cf. Blanden and Machin, 2004; Blanden, Gregg and Machin, 2005; Blanden, Gregg and Macmillan, 2007).

In this connection, we have carried out analyses analogous to those reported on in Tables 2 and 3 above but in which children's earnings or children's class is replaced by children's highest level of educational qualification, according to a six-level classification that ranges

from no qualifications to degree or NVQ equivalent. The results are presented in Tables VII and VIII.<sup>12</sup>

[Tables VII and VIII here]

Two features of main importance emerge in the case of men and women alike. First, the association between family income and children's educational attainment strengthens significantly from the 1958 to the 1970 cohort, in a way that is generally consistent with various findings reported by the economists, while, in contrast, the association between father's class and children's educational attainment remains unaltered: the UNIDIFF model does not improve significantly on that of constant association. Secondly, though, the  $G^2$ s returned under the independence model are much larger with the class-based than with the income-based analyses, pointing to a generally stronger association in the former case than in the latter. And in fact if, as previously with our income and class mobility tables, we calculate underlying global log odds ratios, we find the following. For the 1958 cohort the (weighted) average of such ratios for the income-by-education tables is, for men, 0.64 as against 1.16 for the class-by-education tables, while, for women, these averages work out at 0.73 as against 1.28. In other words, for the 1958 cohort, family income would appear to have been far less consequential than father's class for the level of educational qualification that its members achieved. For the 1970 cohort, however, the corresponding figures to the above are, for men, 1.04 as against 1.17 and, for women, 1.22 as against 1.34. In other words, with this later cohort the income-education association comes much closer to the level of the class-education association, even though still remaining below it - in parallel in fact with the results reported in Table 4 in regard to income and class mobility.<sup>13</sup>

We would then take these findings as lending further emphasis to two points: first, that the widening inter-cohort inequalities detected by Blanden *et al.* - in children's educational chances just as in their income mobility chances - must be seen as driven essentially by

what we, in a class perspective, would have to regard as the surprisingly weak effects of family income in the case of the 1958 cohort; and second, that, in regard to education and mobility alike, father's class would seem be both the more constant and the stronger influence. We might also note that our findings here do not accord well with the suggestion made at various points (e.g. Blanden and Machin, 2004: 235; Blanden, Gregg and Machin, 2005: 104) that income provides a more stable over-time metric of families' economic circumstances than does parental class.

### **Explaining the finding of declining income mobility**

We can now return to the central issue of how to account for the differing results from analyses of intergenerational income and class mobility and, more specifically, to the explanation of cross-cohort change - i.e. declining mobility - as found in the former case as compared with stability in the latter.

In their own attempts at explaining this finding, Blanden and her colleagues (see esp. Blanden, Gregg and Macmillan, 2007) place main emphasis on the growth in inequality in earnings that is known to have occurred between the mid-1970s and mid-1980s. This, they argue, led to an increasing effect of family incomes on children's educational attainment and also on their labour market attachment, and, in turn, on their earnings in early adulthood. Further, they suggest that, given widening income inequality within classes, an explanation might also here be found for the divergence of findings on income and class mobility.<sup>14</sup>

However, it is relevant in this connection to observe that evidence from the US (Mayer and Lopoo, 2005; Lee and Solon, 2006; Hertz, 2007) indicates that large increases in income inequality are not necessarily associated with declining income mobility, at least in the relatively short-term, and that the level of such mobility in the US does in fact show considerable long-term stability. Moreover, for Britain, the findings of Nicoletti and Ermisch

(2007) on intergenerational (father-son) earnings mobility can be taken as pointing in a similar direction. Analysing data from the British Household Panel Study (though with fathers' earnings being imputed rather than observed), Nicoletti and Ermisch find no significant change in mobility for cohorts of men born 1950 to 1960, followed, for cohorts born 1961 to 1972, by some significant - though not precisely estimable - decline in mobility *if this is measured by earnings elasticities*. But while this result may be thought to support Blanden *et al.*, it can also be seen from Nicoletti and Ermisch's analyses (Figures 1 and 2) that during this later period *correlations* between fathers' and sons' earnings remained stable *or actually decreased* - which is obviously not consistent with the sharp increase in correlation between family income and sons' (and daughters') earnings that emerges from the NCDS and BCS data that Blanden *et al.* use (see also Table 6 above). Taken overall, then, Nicoletti and Ermisch's results would seem more in line with the idea of little change in income mobility in Britain during the later twentieth century rather than with that of a quite rapid and substantial decline (cf. Björklund and Jäntti, 2009), and in turn, therefore, more in line with the results of research into class mobility.<sup>15</sup>

From our own standpoint, from which it is, to repeat, the high level of mobility of children in the 1958 cohort that chiefly calls for explanation, we would suggest another possible way in which the apparent decline in mobility of children in the 1970 cohort could be accounted for. This is in fact one that Blanden *et al.* themselves consider but to which we believe greater weight should be given in the light of both their own results and those we have reported.

The possibility we have in mind is that the problem of one-shot measures of income, to which we earlier referred, is accentuated in comparing the family incomes of the 1958 and 1970 birth cohorts - i.e. in 1974 and 1986 respectively - because of a real decrease between these years in the transitory component of earnings. If such a decline occurred, then the measure of family income for the 1958 cohort, quite aside from any problems arising from its construction, would be more affected by transitory elements uncorrelated

with permanent income than would that for the 1970 cohort, and this would then in itself make for a weaker association in this cohort between family income and children's earnings - and likewise between family income and the other variables, including children's education, that we have included in our analyses above. Using New Earnings Survey data, Blanden *et al.* (2004: 136-7) do in fact estimate that for a cohort equivalent to NCDS fathers, transitory fluctuation in earnings account for 32% of the total variance, while for a cohort equivalent to BCS fathers, this proportion falls to 21 per cent. We would regard this finding as an important one, and are puzzled why Blanden *et al.* do not attach more weight to it rather than referring to the former figure as being only 'slightly higher' than the latter. We would also note their further calculation that if the higher figure had reached 38per cent, this would imply that the decrease shown up in mobility between children born in 1958 and 1970 could no longer be regarded as statistically significant. This being the case, we would think it a very reasonable supposition that, if due allowance could be made for the problem here indicated, the cross-cohort difference in mobility would, even if still in evidence, no longer appear as dramatic as it does when the data are taken at face value - and with the result that the findings of Blanden *et al.* would then come into some closer accord with those of Goldthorpe and Jackson.<sup>16</sup>

## **Conclusions**

In this paper we have started out from divergent findings on changes in intergenerational income and intergenerational class mobility that derive from analyses of the same data-sets: i.e. those of the NCDS and the BCS. It is of evident interest to enquire into how this divergence comes about and, in particular, into how far methodological artefacts rather than real social changes - as, say, in the relation between income and class - may be involved. In so doing we have followed a rather tortuous path.

We have shown, first of all, that the contrasting findings are not the result of the researchers concerned working, on account of missing data, with different subsets of NCDS and BCS respondents. Taking the same subset - i.e. that of all respondents who can be included in both income and class mobility tables - we reproduce essentially the same findings as are reported in the original papers.

Second, we have shown that for both cohorts alike there is a stronger association between father's class and child's class than between family income and child's earnings, although this difference is reduced to a statistically insignificant level with the 1970 cohort. This leads us to suggest that class may in general be a better indicator of 'economic status' than at least one-shot measures of current income. But, in any event, as against the background of the long-term stability, or at least only slight and trendless fluctuation, in the level and pattern of social fluidity that is known to prevail within the British class structure, it is the very high level of mobility apparent in the quintile income tables for the 1958 cohort, rather than the lower level apparent in those for the 1970 cohort, that, in our view, stands out as unusual.

Third, we have examined the relationship between class and income, as present in the data that we have used in our analyses of mobility, and find that this relationship is generally stable *except* where family income is involved. For the 1958 cohort there is a much weaker linkage than for the 1970 cohort between family income, on the one hand, and father's class, child's class and child's earnings, on the other. In fact, in the 1958 cohort, though not in the 1970 cohort, we have the rather anomalous finding that the correlation between family income and child's - and especially son's - earnings is lower than the correlation between father's class and child's earnings. There are, in other words, clear indications that it is the limited influence of the family income variable for the 1958 cohort that is crucial to the sharp cross-cohort increase in the intergenerational transmission of economic advantage or disadvantage that shows up in the analyses that Blanden *et al.* report.

Fourth, we have given grounds for supposing that it is the weak effect of this same variable on children's educational attainment, as compared to the effect of father's class, that likewise drives Blanden and her colleagues' further finding of widening inter-cohort inequalities in such attainment in relation to family income.

Thus, while the economists are led to seek for an explanation of the stronger association between family income and children's earnings in the 1970 cohort, and to emphasise the role of rising earnings inequality between the mid-1970s and the mid-1980s, we would rather focus on the weakness of this association in the 1958 cohort. In this specific respect, we believe that a methodological problem may well arise. In the light of Blanden *et al.*'s own estimates of the declining transitory component in earnings, the possibility has to be seriously entertained that the apparent cross-cohort decrease in mobility is, at all events, in some important part the result of the family income variable for the later cohort providing a better measure of permanent income than that for the earlier cohort.

In the absence of other data on income mobility for the period in question, it is unlikely that any definitive resolution of this issue will be possible. However, the final observation that we would make in the light of the results we have reported is the following. *If* the substantial decrease in income mobility that Blanden *et al.* claim between two birth cohorts only twelve years apart is accepted as real - and as indicating, therefore, a large and rapid shift in the relation between family income and parental class as determinants of children's life-chances - it would then seem that two other points have also to be accepted. First, the processes involved in income mobility are ones far more sensitive to relatively short-term changes, of whatever kind may be singled out, than are the processes involved in class mobility. And, second, the processes determining income mobility occur within, or at all events operate alongside, a class mobility regime that, as well as showing greater temporal stability than that which prevails in the case of income, has also to be regarded as stricter, in the sense of entailing a generally stronger association between origins and destinations, and more consequential - as in regard to

children's educational attainment. In other words, the class mobility regime more fully captures the continuity in economic advantage and disadvantage that persists across generations. And regardless, then, of whether the economists' findings are accepted or not, it would appear more relevant if it were on class mobility rather than income mobility that the long-running political debate should focus.



**Table I**

**The collapsed five-class version of the class schema (omitting self-employed workers)**

Class I	Professionals, administrators and managers, higher-grade
Class II	Professionals, administrators and managers, lower-grade; technicians, higher grade
Class IIIa+V	Routine nonmanual workers, higher-grade; technicians, lower grade
Class VI	Skilled manual workers
Class IIIb+VII	Routine nonmanual workers, lower-grade; non-skilled manual workers

Table II

Results of testing for constant social fluidity or uniform change between cohorts:

men (N=3415)

Mobility by	Model	G <sup>2</sup>	p <sup>a</sup>	DI <sup>b</sup>	
Income quintiles	Independence	248.7	0.00	10.2	
	Constant association	19.6	0.24	3.1	
	UNIDIFF	9.5	0.85	1.9	( $\beta = 1.54$ )
Class	Independence	410.0	0.00	13.2	
	Constant association	12.7	0.70	2.3	
	UNIDIFF	12.5	0.64	2.3	

**Notes:**

- a. Degrees of freedom are: independence model, 32; CSF model 16, UNIDIFF model, 15.
- b. Dissimilarity index showing percentage of individual cases misclassified.

Table III

Results of testing for constant social fluidity or uniform change between cohorts:  
women (N=3009)

Mobility by	Model	G <sup>2</sup>	p <sup>a</sup>	DI <sup>b</sup>
Income quintiles	Independence	192.0	0.00	9.4
	Constant association	31.8	0.01	4.1
	UNIDIFF	21.0	0.13	3.5 ( $\beta = 1.70$ )
Class	Independence	291.8	0.00	12.2
	Constant association	23.9	0.09	2.8
	UNIDIFF	22.6	0.09	2.6

**Notes:**

- a. Degrees of freedom are: independence model, 32; CSF model 16, UNIDIFF model, 15.
- b. Dissimilarity index showing percentage of individual cases misclassified.

**Table IV**

**Averages of log odds ratios obtained from 2x2 partitioning of quintile income and class mobility tables**

		<b>Men</b>		<b>Women</b>	
		<b>qu. Inc</b>	<b>Class</b>	<b>qu. inc.</b>	<b>class</b>
unweighted	1958	0.60	1.17	0.48	0.84
	1970	0.97	1.03	0.79	1.00
weighted	1958	0.58	1.12	0.46	0.84
	1970	0.94	1.02	0.80	0.99

**Table V**

**Percentages of family log income accounted for by father's class and of children's log earnings by their own class, one-way analyses of variance**

	<b>Men</b>		<b>Women</b>	
	father's Class	son's class	father's class	daughter's class
1958	9	23	9	40
1970	23	21	24	41

**Table VI**

**Correlations among variables on which income quintile and class mobility tables  
are based**

		<b>Men</b>			<b>Women</b>		
		FI	RC	RE	FI	RC	RE
FC	1958	0.29	0.34	0.29	0.29	0.25	0.19
	1970	0.48	0.31	0.23	0.48	0.30	0.24
FI	1958		0.16	0.18		0.16	0.16
	1970		0.29	0.29		0.27	0.26
RC	1958			0.47			0.63
	1970			0.44			0.64

FC = Father's class  
 FI = Family log income  
 RC = Respondent's class  
 RE = Respondent's log earnings

Table VII

**Results of testing for change between cohorts in the associations between family income and child's education and father's class and child's education: men (N=4217)**

	<b>Model</b>	<b>G<sup>2</sup></b>	<b>p<sup>a</sup></b>	<b>DI<sup>b</sup></b>
Income quintiles	Independence	328.8	0.00	10.2
	Constant association	33.5	0.03	3.5
	UNIDIFF	26.1	0.13	3.1 ( $\beta = 1.43$ )
Class	Independence	573.0	0.00	13.0
	Constant association	19.0	0.52	2.4
	UNIDIFF	15.7	0.68	2.0

**Notes:**

- a. Degrees of freedom are: independence model, 40; CSF model 20, UNIDIFF model, 19.
- b. Dissimilarity index showing percentage of individual cases misclassified.

Table VIII

**Results of testing for change between cohorts in the associations between family income and child's education and father's class and child's education: women (N=4713)**

	<b>Model</b>	<b>G<sup>2</sup></b>	<b>p<sup>a</sup></b>	<b>DI<sup>b</sup></b>
Income Quintiles	Independence	464.6	0.00	11.3
	Constant association	40.7	0.00	3.0
	UNIDIFF	30.9	0.04	3.0 ( $\beta = 1.41$ )
Class	Independence	726.9	0.00	14.1
	Constant association	14.2	0.82	1.7
	UNIDIFF	12.0	0.89	1.6

**Notes:**

- a. Degrees of freedom are: independence model, 40; CSF model 20, UNIDIFF model, 19.
- b. Dissimilarity index showing percentage of individual cases misclassified.

## Notes

<sup>1</sup> We would like to thank David Cox for statistical advice, Tony Atkinson, Anders Björklund, Erzsébet Bukodi, Michelle Jackson, Markus Jäntti, Arnaud LeFranc, John Micklewright and Cheti Nicoletti for helpful information and comments on previous drafts and, especially, Jo Blanden for supplying the data-files which she and her colleagues have used and for answering our many questions about them.

<sup>2</sup> Gorard (2008) has attacked Blanden *et al.* on methodological grounds and for proceeding to conclusions that are unwarranted by their evidence. We would agree with Gorard's point that comparing two birth cohorts only twelve years apart is not a good basis for determining long-run trends in social mobility in the population at large (cf. Goldthorpe and Mills, 2008). However, statements by Blanden and her colleagues that might imply such an over-interpretation of their results chiefly occur in reports on their work prepared for the Sutton Trust. And while we would further agree with Gorard that in this way - and also through extensive but low-quality media coverage of these reports - the idea of declining mobility has been uncritically transformed into a 'social fact', we would regard the academic publications of Blanden and her colleagues as in general displaying very high methodological standards. It is on this work that we concentrate.

<sup>3</sup> This conclusion is supported by results from more aggregated analyses of intergenerational elasticities - i.e. the slope coefficients in regressions of individuals' log earnings on log family income - and also of the correlation of these two variables.

<sup>4</sup> With NCDS, components of family income - i.e. father's and mother's earnings and 'other family income' (see text below) - are sometimes reported as missing where it is unclear whether this means that the data are unavailable or that the family have no income from the source in question.

<sup>5</sup> Worries have also been raised about data on parental earnings for children in the 1958 cohort since the period during which these data were collected in 1974 included the 'three-day working week' crisis, resulting from industrial unrest in the coal mining industry and consequent power shortages. Blanden *et al.* rely here on the findings of an analysis undertaken by Grawe (2004) which concludes that there is no evidence of significant error in the data through parents in some cases reporting their - temporarily - reduced earnings rather than the 'normal' earnings about which they were in fact asked.

<sup>6</sup> While Blanden *et al.* measure family income as the residual from the regression of family income on age and age squared, we work with the unadjusted measure, assuming that it is income *per se* that will be the more crucial for children's life-chances. However, as will be seen, this difference in approach does not appear to be of any great consequence.

<sup>7</sup> The models used are specifically designed to treat the origins-destination association in mobility tables net of any effects that may derive from the differing marginal distributions of the tables. This is of course scarcely an issue in the case of quintile income mobility tables where all marginals will, by construction, be (at least approximately) the same, but it is obviously important in the case of class mobility tables where marginals will reflect the changing shape of the class structure. We have in fact carried out comparable analyses of further 5 x 5 income mobility tables where the categories are defined as percentage deviations from median income and marginals do therefore differ. These analyses give essentially the same results as those reported in the text below from analyses of the quintile tables.

<sup>8</sup> For example, in recent research into intergenerational class mobility in European countries over the later twentieth century, in those cases where the UNIDIFF model did reveal significant shifts in relative rates, the  $\beta$  parameters returned most commonly fell in the range of 0.8 to 1.2 (see Breen ed., 2004).

<sup>9</sup> The weights used are the inverted variances of the log odds ratios.

<sup>10</sup> Assessing the statistical significance of the differences between the log odds ratios from the class and the income mobility tables is not straightforward in consequence of the same individuals being involved in both. However, a method of dealing with this problem has recently been proposed by Cox, Jackson and Lu (2009) who, by way of illustration, apply it to our results. It emerges that the difference between the log odds ratios for class and income mobility tables are, as might be expected, significant for both men and women with the 1958 cohort but not with the 1970 cohort.

<sup>11</sup> It is true that, at least in countries such as the UK and USA, there is evidence of a recent widening of differences in income within social classes; but at the same time there is also evidence of widening income differences *between* classes (for the UK, see Goldthorpe and McKnight, 2006), and McGovern *et al.* show (2007: pp. 89-91 and Table 3.2) that in Britain class was a clearly better predictor of hourly earnings in 2000 than it was in 1992.

<sup>12</sup> Tables 7 and 8 are based on all respondents to the NCDS and the BCS for whom information on father's class, family income and highest level of respondent's educational qualification is available. There are 5,468 cases for NCDS and 3,462 for BCS. For NCDS respondents, highest level of qualification was recorded at age 33 (i.e. in 1991) and for BCS respondents at age 26 (i.e. in 1996). The six categories of the educational classification are in full: no qualification; CSE 2-5 passes/NVQ1; O Level/NVQ2; A Level/NVQ3; higher qualification/ NVQ4; degree+/NVQ5,6.

<sup>13</sup> Using the unweighted global log odds ratios gives essentially the same results and, further, applying the method developed by Cox, Jackson and Lu, referred to in n. 12 above, shows that the log odds ratios for the class-by-education tables are significantly

higher than those for the income-by-education tables with the 1958 cohort but not with the 1970 cohort. These results are available from the authors on request. It may be added that a recent study also using the NCDS and BCS data sets but focussing specifically on class differentials in tertiary qualifications also finds little change between the two birth cohorts (see Cheung and Egerton, 2007).

<sup>14</sup> So far as we can see, Blanden *et al.* (2007) does not add anything that would serve further to confirm that the decrease in mobility shown up in previous work is a real effect. Rather, it takes this result as given - including, implicitly, the generally weak effects of the 1958 family income variable - and focuses on tracing the underlying mechanisms.

<sup>15</sup> We take Nicoletti and Ermisch's results as implying that while the slope of sons' earnings on fathers' earnings increased, the variance of sons' earnings, given fathers', also increased and to a greater degree. Cheti Nicoletti (personal communication) notes that, under the assumption that log earnings are normally distributed, the correlation is invariant to changes in the mean or variance, and could thus be taken as an indicator of 'exchange' mobility, while the elasticity indicates 'structural' mobility. On this interpretation, it would then be clearly more appropriate to compare findings on relative rates of class mobility (as in Tables 2 and 3 above), which are net of structural effects, with earnings or income correlations rather than with elasticities. Unchanging correlations could then be seen as indicating an unchanging mobility regime, while increasing elasticities might also reflect increasing income inequality, which, while of course an issue in itself, need not imply a change in the mobility regime. On these grounds, Björklund and Jäntti (2009) argue in favour of using correlations rather than elasticities in cross-national as well as over-time analyses of variation in the intergenerational association of incomes.

<sup>16</sup> This interpretation is also in accord with the results reported by Blanden *et al.* (2007, Table 14), where the proportion of log family income explained by father's social class

increases from 0.086 in 1974 (NCDS) to 0.232 in 1986 (BCS), while the corresponding increase in GHS is from 0.169 to 0.212.

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