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Cross-National Variation in European Patterns of Social Fluidity: The Effects of Agriculture, Hierarchy and Property

Richard Breen
The Queen's University, Belfast
and
Christopher T. Whelan
The Economic and Social Research Institute, Dublin

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4 Burlington Road Dublin 4 Ireland

Telephone: Dublin 760115 Fax: 686231

CROSS-NATIONAL VARIATION IN EUROPEAN PATTERNS OF SOCIAL FLUIDITY: THE EFFECTS OF AGRICULTURE, HIERARCHY AND PROPERTY

Abstract

In this paper we develop a mobility model which seeks to operationalise Goldthorpe's (1980: 99) argument that social fluidity is shaped by three factors - namely, resources for mobility; the desirability of different class destinations; and the barriers to entry to class positions. We argue that, in trying to apply this insight, three factors must be modelled. These are, first, the particular position of the agricultural sector *vis-a-vis* the non-agricultural sector; second, the advantages that accrue to those who own the means of production; and, thirdly, the hierarchical mobility that arises from the distribution of resources, barriers and desirability once we have controlled for the foregoing factors. We apply this model to the European nations in the CASMIN data set and to data on Irish mobility collected in 1987. We argue that our model allows for a new approach to the comparative study of social mobility and to the question of the relationship between social mobility and politics.

Introduction

For the past fifteen years the so-called 'Featherman-Jones Hauser' (FJH) hypothesis has lain at the centre of social mobility inquiry. It has spawned a plethora of papers, both methodological and substantive. Among the latter, Erikson and Goldthorpe's (1987a and b) analysis of the CASMIN data represents the most exhaustive attempt to subject the FJH thesis to some kind of rigorous test. And, broadly speaking, Erikson and Goldthorpe come to conclusions which are similar to those reached by most others who have examined the hypothesis. Briefly this is that most of the differences in mobility patterns between nations are attributable to structural effects. The impact of differences in social fluidity is correspondingly less. Notwithstanding this, however, there are significant differences in patterns of social fluidity across nations and thus the FJH hypothesis, *strictu senso*, does not hold.[1]

The existence of cross-national variation in social fluidity then directs attention to the causes of such variation, and this ties in to another long-standing interest in mobility research, viz., the relationship between rates of social fluidity (or the degree of openness in intergenerational mobility) and politics. In other words, can specific policies and policy programmes influence rates of social fluidity?

Clearly, the FJH hypothesis denies this, since it posits that "rates of social fluidity are basically the same in industrial societies with a market economy (and) a nuclear family system" (Erikson, 1988, p. 3). Studies such as those of Treiman (1970) reached a similar conclusion. These results are in contrast to the work of a number of earlier authors (such as Glass, 1954), who believed that politics and specific policy programmes could increase rates of social mobility (see Erikson, 1988). In their work on the CASMIN data, Erikson and Goldthorpe have re-formulated the FJH thesis to allow for the possibility of the political helping to shape social fluidity.

> A basic similarity will be found in patterns of social fluidity ... across all nations with market economies and nuclear family systems where no sustained attempts have been made to use the power of the modern state apparatus in order to modify the processes, or the outcomes of the processes through which class inequalities are intergenerationally reproduced. (Erikson and Goldthorpe, 1987b, p. 162).

The phrase "sustained attempts" calls to mind, for example, the long period of social democratic government in Sweden and the impact of communism in Eastern Europe. Clearly, however, there can exist a continuum of policies that attempt, to a greater or lesser degree, to intervene in the intergenerational transmission of advantage rooted in the solidarity of the family and in the markets of the modern industrial state.

Once attention turns from measuring the degree of similarity or difference between nations in social fluidity to the testing of hypotheses about what gives rise to the observed social fluidity in one or more nations, then methodological changes are also required. For example, if one is primarily interested in how much cross-national variation exists in patterns of social fluidity, then the so-called "constant social fluidity model" is a useful yardstick, and was used by, among others, Erikson, Goldthorpe and Portocarero (1982) for just this purpose. However, this model, and others which are primarily descriptive, tell us nothing, in themselves, about *why* patterns of social fluidity are as they are. What is required for this is models which are explicitly explanatory.

Explanatory and Descriptive Models of Social Fluidity

Studies of social mobility tables can be placed on a continuum between descriptive models, which seek to provide a parsimonious account of the frequencies observed in the table; and explanatory models, which seek to explain the observed frequencies. That this is a continuum, rather than a hard and fast dichotomy, is inevitable: even the most purely descriptive of models cannot fail to hint at what processes might be generating the frequency distribution. During the 1980s there was a discernible shift towards explanatory models. Nevertheless, there is still little indication of what factors shape social fluidity or, more importantly, why patterns of social fluidity vary cross-nationally.

Models which have sought to explain social fluidity or, equivalently, the pattern of odds ratios in a given mobility table, can themselves be viewed as falling into one of two broad classes. The first of these uses macro-sociological variables to account for cross-national differences in rates of social fluidity. Grusky and Hauser's (1984) paper is an example of this. Their approach comprised two stages of analysis. In the first stage a model was fitted to account for the pattern of mobility within each of the 16 nations in their sample. Each nation was represented by a 3 x 3 mobility table. This model was essentially descriptive, rather than explanatory. The second stage then involved explaining cross-national differences in the parameter values of the model in terms of macro-sociological measures of, in this case, industrialisation, social democracy, inequality and educational enrolment.

The second approach to explaining social fluidity begins with a single mobility table and attempts to explain the pattern of social fluidity observed there in terms of some explanatory microsociological variables. Clearly, this approach can be extended to cross-national comparisons if we have measured the same set of explanatory variables in each country in our data set. It is important, however, to distinguish between two sorts of "explanatory variables" used in such studies. On the one hand, studies such as those of Hauser (1984), Hope (1982) and Hout (1984) have used what we term measured explanatory variables (possibly exogenous would be a better word). A typical example would be, say, a measure of average educational attainment for men of each origin class. Clearly, one would expect that such a measure should explain some part of social fluidity. On the other hand are studies which use explanatory variables which have not been measured but, rather, have been constructed by the sociologist. The argument here, which is usually implicit, seems to be something along the lines of the following. The analyst believes that a particular social process accounts for some share of the pattern of social fluidity. Lacking any measure of this process by which to test this belief, he or she is obliged to hypothesise such a measure, which usually takes the form of a dummy variable applied to particular cells of the table. The quasi-perfect mobility model is perhaps the simplest example. Hauser's (1978) "levels" model is another, and a straightforward application of Goodmen's (1979) Row and Column Effect II (RC2) model would be a third (and a case where the hypothesised variables are not dummies). Studies using this approach tend to be uncomfortable mixtures of description and purported explanation, in the sense that the explanatory variables may often be constructed with reference to observed patterns of mobility.

The most influential of models using such constructed variables is Erikson and Goldthorpe's (1987a and b) "Core Fluidity Model (CmSF). The starting point of their analysis is the recognition that while, on strictly statistical grounds, the model of constant social fluidity must be rejected, to do so risks discounting results which are of considerable sociological significance. Thus it is to the FJH hypothesis in its less strict form, and the implication of a common or `core' pattern of fluidity from which deviations occur, to which they direct their attention. In developing their core `model' through a `levels' or topological model approach Erikson and Goldthorpe recognise the problem of interpretation posed by the very flexibility afforded by such models. In responding to this problem they propose a topological model based on a number of levels matrices designed in a theoretically informed way to estimate the effects associated with desirability, advantages and barriers (Erikson and Goldthorpe, 1987a: 61-64). The application of this model leads Erikson and Goldthorpe (1987b: 160) to their revised version of the FJH hypothesis but also to the conclusion that such deviations from the core model as do exist do not appear to be amenable to explanation in genuine macro-sociological terms.

We will wish to argue that that conclusion is crucially influenced by the manner in which Goldthorpe's theoretical framework is operationalised through the core model. For the present, though, we will concentrate on spelling out what we believe to be the ideal approach to testing the FJH hypothesis, and, more importantly, addressing the question of the influence of politics on social fluidity. Such an approach would proceed along the following lines. First, it is necessary to specify a model of social fluidity which is parsimonious yet sufficiently general to account for the observed patterns of social fluidity in all the countries in a given data set, in terms of exogenous variables which we believe account for social fluidity in all industrialised nations. These variables would measure characteristics of classes (if we were working with tabular data) or of individuals (if we were working with individual data) and would measure such things as educational qualifications, ownership of property and wealth, and so on - things which are, actually or potentially, open to modification by government policy.

Secondly, cross-national variation in social fluidity would then be attributable to two things: variation in the strength of effect of these exogenous variables; and cross-national differences in the distribution of these variables. So, for example, educational qualifications may be more unequally distributed in country A than in B, but they may have a greater effect on fluidity in B than in A. Conditional on the correctness of our hypotheses about the specific factors determining social fluidity, this approach would shift the explanatory focus of cross-national analyses away from social fluidity *per se* towards variations in the distribution and relative strength of effect of the determinants of mobility, and the causes of these - some of which should lie in the realm of politics.

Mobility in the Republic of Ireland 1987

Needless to say, the obstacle to implementing the strategy outlined in the previous paragraphs is the unavailability of data. However, we have applied a variant of this strategy to mobility data for the Irish Republic collected in 1987. The data which we analyse comprise a nationally representative sample of 2,394 men aged between 20 and 65.[2]

The theoretical basis of our model is Goldthorpe's (1980, p. 99) argument that the pattern of social fluidity is shaped by

(a) the relative desirability of different class destinations;

(b) the resources available to individuals within each origin class which help them gain access to more desirable destination classes; and

(c) the barriers to movement between classes.

Typically we think of resources as "economic, cultural and social resources" (Erikson and Goldthorpe, 1987a, p. 64), while barriers to mobility include the necessity to own the means of production; educational and other qualifications needed for entry to the occupations that comprise a class grouping, and so forth.

Our operationalisation of this model has been discussed at length elsewhere (Breen and Whelan, 1992): here we give a brief summary. In formulating the model we include both hierarchical and non-hierarchical effects, but we have sought, as far as possible, to employ exogenous, measured variables to account for the Irish pattern of social fluidity.

We employ a generalised measure of resources, which comprises the first principal component of two variables:

X1: percentage of fathers in each origin class having only primary education;

X2: the mean score in each origin class on a scale measuring the respondent's perception of his family's relative financial deprivation when he was growing up.

Likewise, we employ a generalised measure of desirability and barriers comprising the first principal component of four measures:

Y1: gross mean household income in each destination class;

Y2: mean score in each destination class on a 20-item consumption scale;

Y3: percentage of men in each destination unemployed or permanently unable to work due to illness or disability over the term of the survey;

Y4: percentage of men in each destination class having more than primary education.

The ownership of the means of production is both a resource for mobility among men of farming, *petit bourgeois* and proprietorial origins as well as a barrier to entry among those from other class origins. We measured these resources and barriers as

P1: the proportion of fathers in each origin class who were self-employed;

P2: the proportion of men in each destination class who are self-employed.

These, then, are our measured variables. We also include variables which, while not measured, relate directly to our theoretical formulation. The first of these is a single parameter to reflect class inheritance applied to all cells on the main diagonal of the table. The second and third reflect the particular position of the agricultural sector: they are a parameter for inheritance by farmers, over and above the overall average level of class inheritance, and a parameter which reflects the barrier to movement into (but not out of) agriculture. Finally, we include one extra parameter which captures the propensity of men of *petit bourgeois* and farm origins to move into the higher managerial, professional and large proprietor class.

This model has two claims to novelty. First, although it is usual to posit a sectoral effect to capture the agricultural/non-agricultural distinction, ours is the first model which takes account of the asymmetric relation between the two. There is a clear barrier to movement into agricultural occupations but not (once we control for class inheritance) to movement out of them. Secondly, while previous studies have used variables to scale origins and destinations, they have employed measures defined on the destination classes and applied them to both destinations and origins (for example, Hauser, 1984; Hout, 1984; Hout and Hauser, 1991). In our model we apply measures defined on the origin classes to the origin classes and measures defined on the destination classes to the destination classes only. We enter these measures into our model as two linear by linear interactions (Goodman, 1979): the first comprises the origin principal component scores derived from the X variables multiplied by the destination principal component scores (derived from the Y variables). We call this variable XY. The second comprises P1 multiplied by P2, which we term P12. The logic behind this is, briefly, as follows.

The basic aim of a model of social fluidity is, initially, to account for the observed probability or odds of a man in origin class i being found in destination class j rather than class j′. Models which relate such odds to the relative desirability of the different destinations are available (for example, McFadden, 1973): however, in contrast to such models (which place the emphasis on utility maximising choices) we want to do this while keeping the destination class marginals fixed. This corresponds to the fact that positions available in each destination class are fixed in number and the relative desirability of classes can only determine the odds of entry subject to this. In other words, desirability only plays a role in shaping odds conditional on the constraints set by the column totals - but it affects odds ratios unconditionally.

By fitting the destination main effect parameters in a mobility model we fix the column marginals. But this implies that a desirability measure cannot then have the same effect on all origin classes in determining the odds of entry into one destination class rather than another. This is because such a measure lies in the span of the vectors that comprise the main effect parameters. Hence, in fitting desirability measures we must allow their effect to depend upon a particular origin class (or set of origin classes). In our model, this is achieved in the fitting of the linear by linear interaction terms which makes the effects of desirability and barriers vary according to resources for mobility possessed by each origin class. Similarly, the effect of resources varies according to the level of desirability/barriers of each destination class. This is both parsimonious and intuitively sensible.

We applied this model to the 1987 Irish data in both a 7 x 7 form (using the CASMIN 7 class categorisation) and a 14 x 14 disaggregated version. The goodness of fit statistics were, respectively, 40.19 on 30 df. ($p > .05$) and 298.6 on 162 df.[3]

What was most striking was the high level of agreement in the parameter estimates derived from applying the same model to the two tables, as shown in Table 1. The difference in the INH parameters is inevitable, given the different categorisations in the two tables, but the other parameter estimates are strikingly similar. These results suggest to us that a properly specified model employing exogenous, measured variables, can provide an account of social fluidity which is both a statistically adequate fit to the data and provides a means of explaining what shapes such fluidity.

The European CASMIN Data and the AHP Model

As noted earlier, cross-national comparisons along the lines set out above are not possible simply because of the unavailability of data. However, the model we applied to the Irish data has a very straightforward logic underlying it and it directs attention to a small number of factors which provide the basis for comparative mobility analyses. These factors are: first, the pattern of mobility flows related to the ownership of the means of production; secondly, the particular position of the agricultural sector and, specifically, the barrier to movement into agricultural occupations; and thirdly, a hierarchical or vertical dimension captured by the ordering of rows and columns (and corresponding to hierarchical measures of resources, desirability and barriers). In the remainder of this paper we use a model which contains effects that relate to each of these factors: we call this the Agriculture, Hierarchy and Property (AHP) model. We employ this model to analyse the set of nine 7 x 7 mobility tables for the European nations in the CASMIN data set. Now, clearly, the AHP model does not use measured variables, and hence falls some way short of the ideal; but what it should enable us to do is to give a parsimonious account of social fluidity in each of these nine nations and to indicate the broad areas in which cross-national variation is significant.

The AHP model contains seven parameters that model social fluidity. The effect of hierarchy is modelled using Goodman's RC2 model. This provides a scoring of rows (X) and columns (Y) so as to maximise the association between the two conditional on the other effects in the model. The association parameter we label beta. We also fit the single parameter for the overall level of class inheritance (INH1). The position of property owners is captured in a parameter, P, which represents movement between all origin/destination pairs of property-owning classes (i.e., cells 1,3; 1,4; 3,1;

3,4; 4,1; 4,3) and distinct inheritance parameters for the *petit bourgeoisie* class (INH2) and for farmers (INH3). The position of the agricultural sector is captured in the agricultural barrier parameter, AGB. We fitted a final parameter for inheritance in the technician/skilled manual class, (INH4). Applied to a 7 x 7 table this model has 19 degrees of freedom for which the critical value of chi-squared is 31.3.

It is important to be clear on the role, within the AHP model, of the very general specification of the hierarchical effect in terms of the RC2 model. The AHP model itself is a proxy for a model with proper measured variables and we use the RC2 specification with this in mind. Clearly, since RC2 scales the rows and columns of a table so as to maximise the association between them, then, if the AHP model fits the data only poorly, we believe that it is unlikely that a model which used given scores for rows and columns in the construction of a hierarchical effect would provide an adequate account of mobility. Conversely, if the AHP model fits the data then it leaves open the possibility that exogenous measured variables may also give rise to row and column rankings which, when combined as one or more non-hierarchical terms, would form part of a model which would fit the data. In addition, of course, in the case of a 7 x 7 table we could enter 11 exogenously measured hierarchical effects without exceeding the degrees of freedom used by the RC2 specification.

In assessing the value of the AHP model, in comparison with other widely used models, it is clear that a good deal more is involved than adequacy of fit. Thus, as Hout and Hauser (1991) acknowledge, it is the theoretical content of the CASMIN core model which affords it superiority over models providing closer fit to the data such as the model of quasi-symmetry. Similarly, Erikson and Goldthorpe (1987a: 72) accept that the results they report are conditioned by the fact that they have chosen to view mobility within a class structure rather than a purely hierarchical context.

> Thus we have no doubt that some of the effects of fluidity that we have captured as ones of inheritance or sector or again of affinity could alternatively be represented as ones of hierarchy.

It is thus possible to view continuous and discontinuous models of mobility simply as alternative descriptions of the same reality. In our application of the AHP model, however, we seek to demonstrate that it is possible to incorporate both continuous hierarchical and discontinuous non-hierarchical effects, both of which are conceptualised in class structural rather than, say, status attainment terms.

Thus in our application of the measured variable approach to the 1987 Irish data we have deliberately avoided the use of prestige measures or indeed any measure of hierarchy which might serve to suppress non-hierarchical dimensions of mobility (Erikson and Goldthorpe, 1989). Similarly, in the applications of the model employing the RC2 specification, we do not assume symmetry in the distribution of resources and desirability or uniformity across nations. Finally, the variables specified in the model must be evaluated in terms of causal adequacy and again we place particular emphasis on the extent to which we are successful in moving towards a genuinely macro-sociological explanation of cross-national variations in patterns of social fluidity.

One piece of evidence which is relevant to such an evaluation is Breen and Whelan's (1992) use of the AHP model to carry out a formal analysis of change in the Irish mobility regime between 1973 and 1987 following the logic set out by Breen (1985). The results of the analysis demonstrate that a specification which allows simply for variation in the size of some of the inheritance parameters provides an adequate fit to the data. Thus, it is possible to describe similarities and differences in the Irish mobility regimes for 1973 and 1987 in terms of general theoretical dimensions. When we use Erikson and Goldthorpe's CmSF model to examine such changes we are faced with a problem. A model which constrains all the social fluidity parameters to be constant across the two data sets provides as adequate a fit to the data as does a model which allows these parameters to take different values in each table. But the latter fails, by a long way, to fit the data. Any change in the nature of Irish social fluidity between the dates of the two enquiries clearly lies outside the scope of what is captured by the CmSF model. These results suggest that the application of the AHP model to the CASMIN data may yield some useful results.

Models Applied to the CASMIN Data

The goodness of fit of the independence model; the Erikson and Goldthorpe (1987a and b) core model of social fluidity CmSF; the model of quasi-symmetry (as applied to these data by Hout and Hauser, 1991); and the AHP model are shown in Table 2, together with the sizes of the samples used in each country.

It is immediately clear from these figures that it is difficult to find a well-fitting model for social fluidity in Poland and Hungary, and France also proves difficult to model.[4]

This is due in no small measure to the large sizes of the samples in these countries, but, as we shall see later, does also appear to reflect genuine differences in patterns of social fluidity. If we compare the CmSF, QS and AHP models, we see that CMF fits the data in only one case (Sweden), QS in three cases (Sweden, Ireland and Northern Ireland), and AHP in three cases (England, Scotland and Sweden). There does not seem, on this basis, to be any evidence to suggest that quasi-symmetry has any particular claim to be an adequate depiction of social fluidity in European nations. Although there are strong indications of some quasi-symmetrical effects in fluidity in these data it is clear that there also exist important asymmetries. In addition, unlike the CmSF and AHP, the QS model is not specified in the light of any theoretical or substantive considerations, and thus it is not clear what interpretation could be placed upon parameter estimates derived from it.

The AHP model returns a lower deviance statistic than the CmSF model in all nations (as we should expect, given that it uses nine more degrees of freedom) except France (cf. footnote 3 for a possible explanation of why this should be so), and is a significantly better fitting model than CMF in all cases except France, Northern Ireland and Sweden (the difference between the two having 9 df., for which the critical value is approximately 17.5). Overall, the QS model returns the best fit, followed by AHP. In the remainder of the paper we base our analyses of cross-national differences in mobility on the application of the AHP model.

Variations in Mobility Due to Structural Differences in the CASMIN European Nations

As Goldthorpe (1985: 561) stresses in attempting to explain class structural change, we should avoid treating structural change as merely a nuisance factor since the greater part of cross-national variations in mobility are accounted for by differences in the speed rhythm and phrasing of such change. As we should expect, most of the difference in mobility patterns between the nine European nations is attributable to differences in structural effects. To show this, we carried out a decomposition of mobility difference along the lines suggested by Breen (1985) and shown in Table 3. In this analysis the data in each country were weighted to sum to a sample size of 10,000 (which is marginally greater than the average sample size in the nine countries).

In Table 3, model 1 keeps both the marginal effects and the association effects cross-nationally constant. Model 2 allows the margins to vary cross-nationally, while model three lets both marginal and association effects vary. Since model 2 accounts for 94 per cent of the total deviance which we can explain, it is clear (and not surprising) that variation in overall mobility patterns is overwhelmingly due to structural differences, rather than to differences in social fluidity.

In order to examine these structural variations more closely, Table 4 shows the origin and destination distributions in the nine nations and the level of structural change in each. If we examine the origin distributions (panel A) we can see that England and Scotland, and to a lesser extent FRG, display a `mature' class structure with very small agricultural sectors and large classes I+II, III, V/VI and VIIa. The other countries have large agricultural sectors and are smaller in one or more of classes I+II, V/VI, and VIIa. It is noticeable that Poland and Hungary both have small *petit-bourgeois* classes and Hungary is notable for a very large class of agricultural workers. The clearest message of panel A, however, is that the nine countries are starting off from very different points.

Moving to the destination distribution (panel B), there is obvious convergence here, with a decline in classes IVa, IVb + c, and VIIb. The decline in farmers is roughly proportional to the size of this class in the origin distribution. There is generally a growth in classes I+II and III and also in class VIIa, but there is no change - or even a slight decline - where VIIa is already large in the origin distribution (as in England and Scotland). There seems to be a convergence across the countries such that class VIa comes to represent about 20-25 per cent of the total in the destination distribution (except in Hungary). Class V/VI generally increases in size between the origins and distributions but declines where it was already (i.e., in the origin distribution) large - notably, again, in England and Scotland. The increase in the skilled manual class is very evident in Poland and Hungary. In general, the convergence between nations seems to be to a position in which class V/VI represents about 30 per cent of the total.

The most interesting issue, however, from the point of view of the analysis of mobility, is to look at the change in the distribution between origins and destinations, as shown in panel C of Table 7. Simply summing the absolute value of the figures shown in each row gives us an index of structural change (panel D) which shows colossal amounts of change in Hungary (78) and Poland (62), and high levels in Sweden (54) and France (45). In all these cases this is due to the decline in the farmer class which was large in all these countries, and in the case of Hungary, Sweden and France, to declines in classes IVa+b and VIIb also. Decline in the latter is very important in the Hungarian case, since this was such a substantial origin class. One important distinction between Poland and Hungary, on the one hand, and Sweden on the other, is that, whereas in the former growth in classes V/VI and VIIa exceeded that in I+II and III, the reverse was true in Sweden. In France, growth was about equally divided between classes I+II and III, on the one hand, and V/VI and VIIa on the other.

The level of structural change is substantially attributed to a "composition effect". In other words, those countries showing high levels of such change were ones where the internationally "declining classes" IVa+b, IVc and VIIb figured prominently in the origin distribution, and those countries which show little such change (notably England and Scotland) are ones where classes IVa+b, and especially, IVc and VIIb, were not very numerous to begin with. However, this is not the whole story. Notably in Ireland, the farm class, despite being very large, declined but not as much as elsewhere, and class VIIb hardly declined at all.

While the effects of structural change on mobility levels and patterns are clearly substantial, we are in broad agreement with the view expressed by Goldthorpe (1990: 417) that it is unlikely that a useful sociological theory of occupational change or class structural change can be advanced. While the State, as in Ireland, may be active in shaping the structure of job opportunities (Breen, *et al.*, 1990), assessment of such interventions raises complex questions relating to the probable outcome that would have existed in their absence (Breen, 1991). Thus, in assessing the potential impact of politics on social mobility, we must focus our attention on relative rates (or "social fluidity").

Differences in Social Fluidity

Differences between nations in social fluidity are captured in different values of the parameters of the AHP model, and these are shown in Table 5. Before discussing these, some clarification of the interpretation of the beta coefficient and the associated row and column scores (X and Y) is required.

As shown in Table 5, the beta coefficient relates to row and column scores constrained to vary between zero and one. Thus, beta is a direct measure of the partial odds-ratio involving the highest and lowest ranking origin and destination classes. Quite clearly, then, Ireland and Poland display the greatest inequality on such a measure, Sweden the least. However, since beta, X and Y are not separately identified in this model, a change of parameterisation of, say, X and Y, will affect beta. To see this, consider Table 6, which shows the beta coefficient from the same model but with a standardisation of X and Y such that they each have a zero mean and unit standard deviation. The second and third columns of the table show the spread of the scores measured as the number of standard deviations between the highest and lowest scoring classes in the rows and in the columns. In this case, then, beta measures the partial odds-ratio involving classes one standard deviation apart in both row and column scorings.

Choice of standardisation of X and Y does not affect the rank ordering of beta across the nine nations, but it does affect how far apart they are, one from another. Use of the 0-1 standardisation, as shown in Table 5, results in greater cross-national differences. This is because, although, with the exception of Hungary, destination scores' ranges in Table 6 are cross-nationally very similar, the row scores' ranges are quite heterogeneous. By adopting the 0-1 standardisation we remove this variability from the row scores and, as it were, push it onto the beta coefficient. This can be seen by comparing Scotland and France. In Table 6, their beta parameters are virtually identical as is the range of their column scores. However, because the Scottish row scorings have a much narrower range than the French, moving to the 0-1 standardisation in Table 5 causes the French beta to become much larger than the Scottish. This suggests, however, that the 0-1 standardisation of X and Y is perhaps more easily interpretable than the normalisation to a zero mean and unit standard deviation, since it allows us to concentrate on beta as a measure of cross-national variation in openness.

Nevertheless, even within the 0-1 bounds, the values taken by specific origin and destination classes will show cross-national variation. To simplify matters we show, in Table 7, the estimated rank orderings of origin and destination classes under the AHP model.

The cross-national similarity in the range of column scores, shown in Table 6, is mirrored by the similarity in the rank ordering of destination class scores in all but Hungary and Poland. Excepting these two, we see that class I+II is everywhere ranked 1; V/VI is always ranked 4 and VIIb is everywhere ranked 7. Class VIIa is always ranked 5 or 6. Classes III and IVa+b are always ranked 2 or 3 except in Ireland and, likewise, class IVc is always ranked 5 or 6, except in Ireland.

The degree of consistency in row scores is rather less, but, again excepting Hungary and Poland, there are some striking similarities. Class I+II is always ranked 1; III always 2 or 3; VIIa always 6 or 7; and VIIb always 6 or 7, except in Scotland. Class IVc is always ranked 5 except in Scotland, England and Northern Ireland, where it is ranked 2. Class V/VI is always ranked 4 or 5, except in Ireland. The ranking of class IVa+b is very variable.

Turning our attention to cross-national variation in the parameters of the model, we see immediately that there are sharp variations in the size of the beta coefficient, with Ireland and Poland displaying particularly high values, followed by the FRG. These countries all display relatively high variation in the origins/resources scores but even when we control for such variation they remain the countries with the highest beta coefficients. At the other extreme, Sweden has the lowest value, followed quite noticeably by the three United Kingdom countries. The size of the Irish coefficient provides a very sharp contrast with the weakness of the hierarchy effects for this country in the CASMIN model. Yet the results which locate Ireland and Sweden at opposite ends of a continuum of openness are not particularly surprising and are consistent with conclusions deriving from rather different types of analysis. Erikson and Goldthorpe (1987b) also stress the relatively low levels of social fluidity in Ireland and their likely connection to class-linked inequities but in their model this lack of openness is indexed by a combination of inheritance and affinity parameters. Similarly, the openness of Sweden is reflected in parameters other than the hierarchical ones. In the case of Poland it must be kept in mind that the hierarchical parameters of the AHP and CMF models are defined somewhat differently. The CmSF hierarchy terms impose an *a priori* ranking of classes and the weakness of the hierarchical terms reflects, among other things, the fact that the "exchange" between the service class and the non-skilled class is less unequal in Poland than anywhere else (Erikson and Goldthorpe (1987b: 157). The AHP model, on the other hand, does not presuppose a particular ordering of classes. As a consequence, the favourable position of the non-skilled manual class is reflected to a significant extent, in its relative standing in the origin and destination distributions or, in other words, in terms of the resources such positions command as origins and their attractiveness as destinations. Thus success in reshaping traditional hierarchies to the advantage of manual workers is reflected in the row and column scores but does not result in greater openness as defined by the AHP model.

An examination of variations in the other parameters leads us to focus a great deal of our attention on Ireland and the countries of the United Kingdom. While the FRG returns a particular high coefficient for farming inheritance and Hungary a reasonably high coefficient for *petit-bourgeoisie* inheritance, the numbers involved are very small. It is Scotland, Ireland, Northern Ireland and France which display distinctively high levels of *petit bourgeoisie* and farming inheritance. All four countries also have relatively high scores on the property coefficient although the Ireland figure is substantially in excess of that for all other countries.

A high level of emigration is one plausible explanation of the large values for the inheritance parameters in Ireland, Northern Ireland and Scotland. To an important degree none of these countries forms anything approaching a self-contained labour market. The tendency to observe an unusually high level of immobility may be directly related to the absence from our tables of significant numbers of those who have been mobile. Other factors which can play a role in accounting for such variation may be related to emigration but are not necessarily so. These include variations in the extent to which property ownership has ideological, emotional and cultural significance and a propensity to develop strategies which involve various "packages" of ownership and employment (Hannan and Commins, 1992).[5] The pattern of coefficients for the property effects provides some support for this hypothesis. Thus the magnitude of the coefficient for Ireland is consistent with the dominance of the *petit bourgeoisie* and farmers in Irish economic and political life and their uniquely advantaged position in the State's taxation and transfer system (Rottman, Hannan *et al.*, 1982). In contrast, the low coefficients for farming inheritance and property effects in Hungary are entirely consistent with our expectations of the consequences of large-scale collectivisations.

With regard to entry to farming, it is the countries of the United Kingdom which exhibit the most extreme barriers; with Scotland and England displaying values far in excess of any other countries. This result is unlikely to be unrelated to the fact that in each of these countries farming displays a significant decline in its relative hierarchical position as between origins and destinations. An explanation of these differences would require a more detailed analysis of long-term trends in the structure of British agriculture than we are capable of providing. Finally, it must be acknowledged that the relatively high coefficient for Hungary is somewhat surprising in view of the "depeasantisation" of agriculture (Erikson and Goldthorpe, 1987b: 154).

The final coefficient which requires comment is that relating to inheritance in the skilled manual class. The most extreme value occurs in Ireland. This finding is consistent with the influence of British craft union practices in a country with restricted employment opportunities. By 1987 a significant reduction in the strength of this effect could be observed.

If we examine the pattern of results by country, Ireland and Sweden again represent the extreme cases. Sweden displays below average effects on all variables with the exception of skilled manual inheritance. Thus, while unlike the CASMIN core model, the hierarchy effect for Sweden is distinctly weak, our conclusions, otherwise, are entirely consistent with those deriving from this model, in that

> ... the Swedish class structure shows a distinctive degree of openness in that both barriers to mobility and forces making for immobility are pervasively weak. (Erikson and Goldthorpe, 1987b: 158).

Ireland, on the other hand, is at the opposite end of the continuum and has the dubious distinction of having the highest coefficients for both hierarchy and property, while at the same time exhibiting relatively strong tendencies towards immobility in the *petit bourgeoisie* and farming classes. Only Poland comes close to that, matching the Irish value on the hierarchy dimension, and here it must be kept in mind that a rather different hierarchical ordering of classes is involved. The FRG combines higher values in the hierarchy dimension and relatively strong inheritance tendencies among the skilled manual with relatively low values on all of the other effects, with the exception of the farming immobility effect referred to earlier. France, on the other hand, combines an intermediate score on the hierarchy dimension with relatively strong tendencies towards immobility. Scotland and Northern Ireland combine strong tendencies towards immobility in the *petit bourgeoisie* and farming classes with particularly strong barriers to entry to the latter class. While England also exhibits this feature, it is the country which comes closest to Sweden in terms of weakness of its hierarchical, property and inheritance effects.

Departures from the AHP Model

As we noted earlier, the AHP model actually fits the data in only three cases (England, Scotland and Sweden). In the case of Poland, and, to a lesser extent, France, we might appeal to the large sample size as a means of accounting for this. However, in these cases, and in all the others, there is a simple explanation for why the models do not fit according to the strict criterion. Virtually all the problems are related to the position of farmers and farm workers. There is more movement between agricultural origins and destinations in skilled and semi-skilled work (Classes V/VI and VIIa) than our model allows for. If we fit our model with all agricultural origin cells removed, then we find it fits in virtually all cases. Indeed, if we fit cells 4,5 and 4,6 exactly, then the model fits in all but France, Poland and Hungary, as Table 8 shows, where this model is labelled E (for extended) AHP.

If we compare the results in Table 8 with those in Table 2, then we see that the extra parameters added to the AHP model make a substantial difference in those countries where structural change was greatest - particularly France and Hungary - and have very little impact in England and Scotland, where such changes were small.

One possible explanation of this pattern could be the tendency, which has been observed in Ireland, for farmers to display particularly strong tendencies to opt for different educational routes depending on the sex of their children; with a concentration on technical/manual training for males and a greater emphasis on more academic education leading to clerical and minor professional positions for females. Such extreme differentiation of gender roles is clearly part of a more general cultural and value system which, for males, is likely to place higher values on manual rather than clerical skills. The higher value placed on such skills are also likely to be related to factors such as involvement of family labour in the operation of farms, the tendency to combine farm and non-farm work and the reduced attractiveness of clerical work if the probability of counter-mobility to the agricultural sector makes career advancement a less salient factor. (Hannan, 1970, Hannan *et al* 1983).

Conclusions

In this paper we have sought to develop a mobility model incorporating sectoral, hierarchy and property effects in order to operationalise Goldthorpe's (1980) account of the mobility process. The AHP model is based on a class structural approach to explaining mobility and, as with the CASMIN core model must be evaluated in such terms.

The approach we have described allows us to develop a model which is parsimonious yet sufficiently general to account for observed patterns of social fluidity across the European nations in the CASMIN data set. Our preferred approach would be one which used measured variables and attributed cross-national variation to differences in the distribution and relative strength of effect of the determinants social fluidity. The absence of appropriate data led us to develop the AHP model as a proxy for such an approach. We believe, however, that the AHP model provides a useful account of social fluidity in European nations. In particular, variations in the model´s parameters capture cross-national differences in social fluidity and these variations are broadly interpretable in the light of what we know of the social and political processes in each country. This brings us closer to what we believe to be the main objective of studies of comparative mobility - namely, to account for the distinctive features of the mobility regimes of specific countries in terms of general effects derived from an explicit theory of mobility.

FOOTNOTES

1. We assume familiarity with the distinction between absolute mobility, on the one hand, and relative mobility or social fluidity, on the other. Conventionally, the latter is identified with the pattern of odds-ratios in the mobility table. Structural effects refer to the difference in the marginal distributions of origins and destinations, which reflect, albeit in an indirect way and confounded with other influences, changes in the class structure over time. Attempts have been made to formalise the idea of structural mobility in the context of log-linear analyses of mobility tables (notably by Hope, 1981, and Sobel, *et al.*, 1985) but we do not employ their definitions or methods in this paper.

2. See Callan, *et al.*, 1989 and Whelan, *et al.*, 1991) for further details.

3. This model has 162 degrees of freedom because we fitted an extra parameter to allow for mobility between the three farming classes which are distinguished in the finer classification.

4. CmSF was developed using the English and French data which perhaps accounts for why, in contrast to all the other models reported in Table 2, CMF fits the French data better than it does the German.

5. Thus for Ireland Hannan and Commins suggest that the small total income of small farm households now includes at least three sub-groups, viz. (i) a minority where farming operations ensure a viable household income; (ii) those pluriactive households where farm incomes are supplemented by non-farm earnings and (iii) those relying predominantly on state transfers.

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Table 1: *Parameter Estimates from Models Applied to 1987 Irish mobility data (standard errors in parentheses)*

Variable	*7 x 7 Table*		*14 x 14 Table*	
INH1	0.259	(.06)	0.345	(.06)
INH2	1.344	(.34)	2.204	(.36)
AGB	-1.796	(.23)	-1.736	(.23)
SLP	0.760	(.13)	0.701	(.13)
P12	1.259	(.17)	1.220	(.17)
XY	0.606	(.05)	0.621	(.04)

Table 2: *Goodness of Fit of Models of Independence; Core Social Fluidity; Agriculture, Hierarchy and Property; and Quasi-symmetry, Applied to CASMIN European Data Sets*

Independence		*CmSF*	*AHP*	*QS*
df.	*36*	*28*	*19*	*15*
ENG	2202	68.34	26.67	49.52
(N = 9434)				
FRA	8609	83.97	119.44	57.20
(N = 18671)				
FRG	277	105.84	55.79	37.99
(N = 3890)				
IRL	1193	68.39	33.14	17.24
(N = 1991)				
NIRL	959.1	44.04	42.33	21.26
(N = 2068)				
POL	10760	379.02	161.36	78.98
(N = 32109)				
SCO	1431.6	7.84	26.25	51.44
(N = 4583)				
HUN	2971.2	245.58	110.43	56.97
(N = 20749)				
Total		1110.11	604.93	386.09
df.		256	171	135

Table 3: *Decomposition of Cross-National Variation in Overall Mobility (N of each country fixed at 10,000)*

	Deviance	*df.*
Model 1: M+N+I	27538	403
Model 2: M+N+I	2458.2	307
Model 3: M+I)*N	946.2	171
Explained deviance		
(1 minus 3)	26591.8	
Error deviance (3)	946.2	
Percentage of explained deviance due to cross-national differences in		
Marginal effects	94.3	96
Association effects	5.7	136

M = marginal effects
N = country main effects
I = row/column association effects

Table 4: *Structural Effects*

A. Percentage Distribution of Cases: Origins

Origin Class

	I+II	III	IVa+b	IVc	V/VI	VIIa	VIIb
ENG	13.2	7.4	9.6	4.5	39.0	22.8	3.6
FRA	11.3	8.7	13.7	25.9	19.3	14.6	6.6
FRG	14.1	5.8	11.4	13.4	37.0	15.2	3.1
IRL	6.0	4.6	10.0	38.7	14.1	20.0	6.7
NIRL	8.8	6.6	9.3	22.9	20.7	26.1	5.5
POL	7.3	2.3	3.1	53.2	18.0	12.0	4.1
SCO	10.2	7.4	7.2	5.1	38.7	26.1	5.3
SWE	10.8	3.5	11.1	25.8	25.6	20.0	5.2
HUN	6.5	5.6	7.1	26.6	13.8	18.8	21.6

B. Percentage Distribution of Cases: Destinations

Destination Class

	I+II	III	IVa+b	IVc	V/VI	VIIa	VIIb
ENG	15.1	9.2	7.8	1.6	32.8	21.9	1.6
FRA	20.8	10.3	9.5	10.7	24.4	21.0	3.3
FRG	27.7	4.7	7.2	3.5	37.3	18.3	1.3
IRL	13.7	9.1	8.4	21.4	20.0	20.7	6.6
NIRL	17.8	9.4	10.2	9.6	25.7	24.0	3.2
POL	18.0	2.5	1.9	24.6	30.8	19.2	3.1
SCO	21.7	9.1	5.4	2.8	33.0	25.2	2.8
SWE	24.4	7.8	8.1	5.2	30.0	22.3	2.0
HUN	15.5	7.0	1.8	0.6	31.1	30.1	13.9

C. Change Between Origin and Destination Distributions, Measured as Destination Class Total Minus Origin Class Total, Expressed as Percentage of Total N.

Class

	I+II	III	IVa+b	IVc	V/VI	VIIa	VIIb
ENG	12.0	1.9	-1.7	-3.0	-6.2	-0.9	-2.1
FRA	9.5	1.6	-4.2	-15.1	5.1	6.4	-3.2
FRG	13.6	-1.2	-4.2	-9.8	0.3	3.0	-1.7
IRL	7.6	4.6	-1.6	-17.2	6.0	0.7	-0.1
NIRL	9.0	2.9	0.8	-13.2	4.9	-2.1	-2.3
POL	10.6	0.2	-2.1	-28.6	12.8	7.3	-1.0
SCO	11.5	1.7	-1.7	-2.3	-5.7	-0.9	-2.5
SWE	13.7	4.3	-3.0	-20.6	6.4	2.4	-3.2
HUN	9.0	1.4	-5.3	-26.0	17.4	11.3	-7.7

D. Overall Index of Structural Change

ENG	FRA	FRG	IRL	NIRL	POL	SCO	SWE	HUN
28	45	34	38	35	62	26	54	78

Table 5: *Parameter Estimates from AHP Model*

ENG	*INH1*	*INH2*	*INH3*	*INH4*	*SELF*	*AGB*	*BETA*
ENG	0.06*	1.26	1.69*	0.22	0.29	-3.0	3.53
FRA	0.14	1.53	2.17	0.27	0.54	-1.68	4.07
FRG	0.00*	1.12	3.66	0.58	-0.30	-0.96	4.97
IRL	-0.16*	2.06	2.61	1.13	0.96	-1.96	7.17
NIRL	0.34	1.19	2.45	-0.05*	0.68	-2.29	3.48
POL	0.19	1.97	1.81	0.21	0.58	0.00*	6.06
SCO	-0.17	2.08	2.76	0.48	0.61	-3.41	3.62
SWE	-0.14*	1.10	1.79	0.46	0.16*	-1.20	3.33
HUN	-0.23	1.89	0.94	0.94	0.11*	-2.14	3.72

* Not significant aT p < .05.

Note that INH2, INH3 and INH4 are all measured ad deviations from INH1.

Table 6: *Beta Estimates When Row and Column Scores are normalised to have Mean Zero and Unit Standard Deviation, and the Range of the Estimated Row and Column Scores Measured in Standard Deviation Units*

	BETA	*Range of* *Rows*	*Cols.*
ENG	0.38	2.4	3.3
FRA	0.40	3.1	3.1
FRG	0.55	2.9	3.1
IRL	0.66	3.0	3.5
NIRL	0.37	2.5	3.1
POL	0.55	3.2	3.4
SCO	0.41	1.7	3.2
SWE	0.35	2.7	3.1
HUN	0.39	3.1	2.3

Table 7: *Rank Ordering of Row and Column Scores*

A.	*Origin Class*						
	I+II	*III*	*IVa+b*	*IVc*	*V/VI*	*VIIa*	*VIIb*
ENG	1	3	4	2	5	7	6
FRA	1	2	3	5	4	7	6
FRG	1	3	2	4	5	6	7
IRL	1	2	4	5	3	6	7
NIRL	1	3	5	2	4	7	6
POL	1	5	3	6	2	4	7
SCO	1	3	6	2	5	7	4
SWE	1	2	3	5	4	7	6
HUN	1	2	4	5	3	6	7
B.	*Destination Class*						
	I+II	*III*	*IVa+b*	*IVc*	*V/VI*	*VIIa*	*VIIb*
ENG	1	2	3	5	4	6	7
FRA	1	2	3	6	4	5	7
FRG	1	3	2	5	4	6	7
IRL	1	2	5	3	4	6	7
NIRL	1	2	3	6	4	5	7
POL	1	4	5	6	2	3	7
SCO	1	2	3	5	4	6	7
SWE	1	2	3	6	4	5	7
HUN	1	3	4	2	5	7	6

Table 8: *Extended AHP Model Applied to CASMIN Data Sets*

	17 df. *EAHP*
ENG	22.82
FRA	75.28
FRG	21.37
IRL	27.27
NIRL	24.26
POL	140.64
SCO	19.73
SWE	24.82
HUN	41.93
TOTAL	398.12
df.	159

[illegible] Burlington Road [illegible]

Telephone [illegible]