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SOR MODELS AND ETHNICITY DATA IN LIS AND LES: COUNTRY BY COUNTRY REPORT

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Abstract

This research considers the idea that a single metric expressing distance between social groups may be an adequate tool for investigating the relationship between ethnic / nationality minority group membership and social stratification. A Stereotyped Ordered Regression (SOR) model is proposed as a methodology for deriving this metric[1], and this paper considers the role of SOR models for the variety of countries with appropriate data made available by the Luxembourg Income and Employment studies (LIS and LES). In particular, by making the referents of this metric relatively consistent between different countries, it is suggested that a cross-nationally comparable representation of ethnic / nationality group membership can be derived which reduces the difficulties of international comparative research on ethnicity.

Section one of this paper deals with three introductory issues : the clarification of the proposed methodology; the possibilities for ethnicity analyses as available from the LIS / LES datasets; and the theoretical framework used to draw substantive cross-national comparisons. Section two comprises a summary of the descriptive patterns observed for selected indicators of social stratification by ethnic / nationality groups for each country, and the presentation of the SOR orderings derived from them. In section three, the possibilities for using those SOR orderings in analytical human capital style models of social stratification are considered. Lastly in section four some of the more prominent conclusions are drawn together.

[1]This approach has been investigated in greater detail for the case of Britain by Lambert and Penn (forthcoming 2001).

1. Introduction

1.1 Context and methodology

The position of ethnic or national minorities within a country's order of social stratification is of major interest to sociological analysis. Furthermore cross-nationally comparative research may seem an ideal tool to evaluate those positions as a function of a country's history, social structure and social policies. Yet despite the prominence given to ethnicity / nationality debates in both international and national politics, there has been very little cross-nationally comparative survey research on the position of ethnic or national minority groups (and in many cases, very few country-specific analyses either). This situation can be traced to two main problems.

Firstly, the conceptualisation of ethnic / nationality group membership is contested, and its various 'referents' (ie the concepts to which it refers) country-specific. In much Anglo-American research, ethnicity is taken as a combination of factors including identification with country of ancestors' origin, skin colour, language, shared cultural values, and religion (Mason 1996). Large ethnic groups are identified empirically as those where a number of people have a broadly coincident mixture of these properties. This approximates a Weberian conception of ethnic groups as 'status groups' (Stände). The various national mixtures of referents prompts the terminology, adopted here, of ethnic / nationality groups (cf Martiniello's (1995) term 'ethno-national identities'). On the other hand a wide literature disputes this conception. A common argument is that the multiplicity of complex ethnic identities and concepts cannot be adequately mapped by a few simple categories (cf Modood et al (1994); Ballard (1997)). Additionally many writers have questioned the role of such Weberian concepts, and provide alternative formulations of ethnicity (eg Hall 1992; Wieviorka 1995). Nevertheless the neo-Weberian fusion of subjective ethnic identity with more visible and historical categories is attractive to survey researchers - particularly so in the UK and USA where it is often accepted that subjective identification with group names through survey questions is an adequate measure of ethnic group (eg Bulmer 1996). Such subjective association with groups captures what Banton (1997) identifies as core components of ethnicity conceptions, namely mechanisms for the formation and continuation of groupings.

In different countries, similar components of ethnicity can be identified, but the degree to which they combine is country-specific. In particular, in different situations one or another referent may be given prime value – in Switzerland, for example, this may be language, but in Germany, nationality. In few countries is the mixture of referents identical, so that comparison of different categories is inherently ambiguous. Since a nation's political and cultural milieu determines the social constructs of ethnicity used in survey measurement, there is a danger that secondary analyses of a particular nation's data will merely reproduce the dominant discourses of its own institutions (Lloyd 1995).

Additionally, connecting with any survey analysis of ethnicity are the related, but theoretically distinct, concepts of immigrant status and nationality. These measures are widely analysed within survey data in economics (eg Chiswick 1978). Yet they provide a far less comprehensive topic than ethnicity[2], first because important ethnic differences in social stratification within immigrant (or nationality) categories are widespread, and second because whilst the analysis of ethnic groups subsumes that of immigrant groups, the analysis of immigrant categories is blind to both the reproduction of ethnic difference associated with earlier immigrant generations, and other ethnic fissures unconnected with recent immigration (cf Smith and Blanc 1995). Nevertheless, in survey research the most commonly available referent to ethnicity is country of birth or nationality. Furthermore, as we shall see below, the position of very many ethnic / nationality groups in various countries is closely entwined with their (historical) status as immigrants. In summary, conflicting conceptions of ethnicity, alternative referents, and confusion with data on immigration, have lead many authors to conclude that the comparative analysis of ethnicity through survey research is close to impossible (eg Hoffmeyer-Zlotnik (2000)). Where survey research has proceeded, uneasy comparative conclusions have been dominated by the recognition of conflicting referents (Stille 1999; Gibson 1997).

Secondly, more pragmatic obstacles to comparative research on ethnicity also exist. In many countries, the terms of reference of ethnicity are highly politicised and the measurement of its components through surveys meets resistance. This is most obvious in France (Gineste 1999), but also visible in other countries. As a consequence, often only certain tangential referents to ethnicity can be measured in a country. This has the effect of ignoring other ethnic minority members of the population, and also of making universal data collection on any one harmonised concept very hard (cf Neske 2000). Furthermore, it is often not possible to contact an adequate number of respondents from ethnic minority groups using national social surveys, due to factors such as their low representation in the population, higher patterns of non-response to surveys, and social and regional marginalisation (eg Smith 1996; Dowley and Silver 2000).

The methodology embodied in the present paper suggests partial solutions to both of these problems. In every LIS / LES study for which it proves feasible, a limited number of 'ethnic / nationality' categories have been constructed, and assigned a score based on a country-specific model for the distribution of their respective human capital and social characteristics. In this way in all countries the categories are scored by the same modelling referents, regardless of the component concepts used to derive the ethnic / nationality categories themselves. This may overcome the ambiguity of comparative ethnicity analyses, and reduce the danger highlighted by Lloyd (1995) of reproducing nation-specific models. It should however be emphasised that the way in which each country–specific SOR model develops need not be the same – in practice we see that some place greater emphasis on educational differences, and many place greatest

[2] Indeed, the analysis of immigrant categories provides a paradox : discussion of social policy concerning immigration is intrinsically tied to discussion of the long term settlement of immigrants and their descendants (Schnapper 1992), yet the category immigrant is by definition transient.

emphasis on age differences. (The characteristics used to construct the SOR orderings are indicators of age, age-squared, marital status, highest and lowest educational level, self-employment status and unemployment status.)

Next, we assess the role of this scoring in predicting further elements of social stratification, examining the role of ethnicity as operationalised through human capital and social characteristics. At this stage, the representation of ethnic nationality groups through a continuous metric means that a small or biased representation of any one ethnic group is far less problematic.

The SOR model approach

The SOR model approach makes use of orderings of derived ethnic / nationality group categorisations as an heuristic to describe the position of members of those categories in terms of the distribution of human capital and social characteristics within a country. In the analysis below, descriptive statistics are initially presented indicating the age and gender structure, the distribution of educational qualifications, employment positions and income levels, for each minority group in each country. These values are broadly representative of the populations in each country, based upon population weights provided by the LIS and LES studies themselves.

The SOR model quantifies a ranking of ethnic / nationality groups, ordering those groups within a country from one extreme in the distribution of social and human capital characteristics to another. This follows an approach used by Hendrickx and Ganzeboom (1998) in quantifying a ranking of social class groups by human capital attributes, and makes use of software macros provided by Hendrickx (2000 and 2001)[3]. The derived SOR ranking can prompt interesting conclusions about the relative characteristics of ethnic groups in different countries.

The SOR model itself, proposed by Anderson (1984), is a variation on the multinomial logit model, whereby a parameterisation constraint ? scales the values associated with the outcome ethnic categories **(1)**. For ease of interpretation the ? scales can be normalised, as are those shown in the analysis below.

[3] We can note that the construction of a SOR metric is not equivalent to the construction of a latent variable indicating 'ethnicity'. It shows only how the ethnic / nationality categories may be placed in an order with respect to the covariates used to develop the SOR model (cf Hendrickx and Ganzeboom 1998:391; DiPrete 1990:761; Anderson 1984:6). In practice these orderings may or may not capture a large proportion of the elements of ethnic difference within a country.

$$\Pr(g = g_s \mid \mathbf{x}) = e^{-? s \mathbf{ß x}} \; / \; S_1^{\,s} \; e^{-? s \mathbf{ß x}} \qquad \textbf{(1)}$$

g = ethnic group category of individual, g=1, .. s
x = vector of human capital and social characteristics
ß = vector of parameter coefficients
? $_s$ = parameter constraints on **ß** specific to ethnic group s

The components of **x**, used in all countries with the LIS / LES harmonised data[4], are indicators of age; age-squared; gender; marital status; self-employment status; unemployment status; highest educational level; lowest educational level.

A useful corollary of these models is that there is no theoretical problem in modelling combined categories 'g' obtained by cross-classifying alternative referents to ethnicity, or indeed by other social characteristics. Thus one way of examining the putative interaction of ethnic and gender effects would be to derive SOR scores for 'ethnic / nationality by gender' categories, as is subsequently undertaken here. Nevertheless, for simplicity and within the constraints of software made freely available by Hendrickx (2001), the maximum number of ethnic / nationality categories modelled in these analyses is six (twelve ethnic / nationality by gender categories).

The SOR model estimations presented do not make use of any sample weights and indeed utilise listwise deletion of cases with missing data. In the context of an analysis of relative effects, neither is necessarily a major problem, although the results are potentially based upon a non-representative sample. Furthermore the construction of the SOR estimates is expected to be volatile if any ethnic / nationality groups are particularly sparsely represented in the surveys[5].

Previous applications of the SOR model include the scoring of social class categorisations (DiPrete 1990; Hendrickx and Ganzeboom 1998). The SOR model is very closely related to Goodman's class of 'association' models (Goodman 1979), which themselves have been applied extensively in the scoring of occupational classifications (eg Clogg 1982; Rytina 2000).

Many other methods of scaling have been applied to categorical data, a few examples of which have been applied to the scoring of ethnic / nationality groups. Prandy (1979, 1980) used multidimensional scaling and canonical correlation analyses to create scales of ethnic distance between UK groups defined by country of birth, based upon measures

[4] In a relatively small number of countries some of these variables could not be derived consistently; these are indicated in section two.

[5] This is an inevitable consequence of the categorical regression formulation. However the SOR model can still be presented as ameliorating the problem of category specific under-representation : it allows us to contextualise smaller categories within larger ones, and it allows for the possiblity of constructing the SOR ordering on a larger dataset, but utilising it on a smaller one. For further discussion, see Lambert and Penn (2001 forthcoming).

of residential segregation, economic activity and housing quality. Johnson (1990) used latent class analysis to scale measures of Hispanic ethnicity in the US in terms of a mixture of the alternative referents to ethnicity discussed above. Jones and Luijkx (1996) created and analysed a series of 'diversity indexes' indicating distance between immigrant groups (and cohorts) in Australia in terms of, separately, language groups, religion, education, socio-economic position and income, relating these to an analysis of marital endogamy / exogamy between the various groups. Lastly, many econometric analyses (eg Chiswick 1978) measure immigrant status as a continuum of years since immigration.

However, the attraction of the SOR heuristic is its regression formulation. It allows us to score ethnic / nationality categories in terms of a specified set of *explanatory* covariates, and to examine the specific details of the SOR function.

Human Capital Analysis

In section three we move on to consider a way of utilising our SOR scores in further analyses. An obvious method of assessing the role of ethnic / nationality group in social stratification is to include its indicators in human capital style regression models, to attempt to show the relative role of ethnicity effects in the context of other explanatory variables. A simple form of human capital model proceeds by estimating the coefficient associated with a dummy variable indicator for membership of a specific ethnic / national minority group **(2)**[6]. This gives an indication of the weight and direction of explanation associated with the relative role of ethnic group membership in predicting a social stratification outcome in the context of other explanatory variables.

In this paper such models are estimated for the prediction of income on the basis of a selection of human capital and social characteristics, and for the prediction of job status as derived from the Ganzeboom et al (1992) ISE scale via ISCO 1988 occupational classifications (cf Elias 1997). In awareness of the gendered nature of social stratification structures we estimate these models separately for groups of men and women[7].

[6] A wide literature has discussed how best to assess ethnic / nationality effects within the human capital framework (eg Cain 1987; Leslie 1998). An influential argument which is ignored here concerns the problematic that ethnic groups represent structural breaks within a population which should not be analysed together in the same model (cf Stewart 1983).

[7] Lambert and Penn (2000) have argued that another important structural break is found in human capital style income prediction models, namely divisions between various possible social class groups.

$$y_i = \mathbf{a}\mathbf{G}_i + \mathbf{?_1}\mathbf{G}_s + e_i \qquad \mathbf{(2)}$$

y_i = individual's social stratification outcome
a = vector of estimated parameter coefficients for effects of human capital and social characteristics
$\mathbf{G}_i$ = vector of individuals' human capital and social characteristics
$\mathbf{?_1}$ = vector of s estimated parameter coefficients for membership of ethnic groups
$\mathbf{G}_s$ = dummy vector indicating individual's ethnic group 1,..,s
e_i = random error term for individual

The components of $\mathbf{G}_i$, again the same in all countries, are indicators of age; age-squared; marital status; highest and lowest educational level; self-employment status and full-time / part-time employment status.

Next, these models are adapted to incorporate the derived SOR estimates of the relative position of the different ethnic groups. First, for each country the SOR estimates are substituted for the ethnic group dummies as alternative predictor variables **(3)**; second, for each country a model is estimated with both the SOR values and ethnic group dummy indicators included as predictors **(4)**. These results are compared with a 'baseline' model using human capital and social characteristics but excluding any conception of ethnicity as an explanatory variable.

$$y_i = \mathbf{a}\mathbf{G}_i + ?_2?_s + e_i \qquad \mathbf{(3)}$$

$?_2$ = estimated parameter coefficient for relative effect of ethnic group as operationalised through SOR order
$?_s$ = SOR estimate for ethnic group s of individual i

$$y_i = \mathbf{a}\mathbf{G}_i + \mathbf{?_1}\mathbf{G}_s + ?_2?_s + e_i \qquad \mathbf{(4)}$$

The components of $\mathbf{G}_i$ are very closely correlated to the components of **x** used to construct the SOR parameters $?_s$. This generates an obvious problem of regression misspecification due to endogenous predictors. Although not yet thoroughly evaluated (cf Lambert and Penn 2001), it is expected that this misspecification should prove empirically minor. Whilst the SOR parameters do reflect human capital and social characteristics, they are nevertheless primarily indicators of ethnic / nationality group, and should be no more endogenous to the human capital function than any other realisation of an ethnic group variable.

As analytic tools for investigating social stratification, models **(2)**, **(3)** and **(4)** are unsophisticated representations of the human capital function (cf Willis 1987; Cain 1987; Leslie et al 1998) : they impose a simplistic, unified framework of earnings or employment level determination using the same explanatory variables in each country. We hence run a serious risk of insensitive, universalist comparative analysis (cf O'Reilly 1996). We also ignore an analysis which would be of great substantive interest, namely a more thorough investigation within each country of the adequate specification of the human capital functions, including the possibilities of multiple interactions between covariate effects. Instead, our 'broad brush' models represent the inevitable trade-off

found in comparative quantitative research conducted within a limited time scale. Instead it is hoped that our models are sufficiently sensitive to identify the basic patterns of stratification; given the wide array of factors and theories of relevance to our analysis, it is only these basic patterns that we can realistically attempt to survey at this stage.

1.2 Data

The LIS and LES datasets provide a wide range of cross-nationally 'harmonised' information relevant to the analysis of social stratification[8]. In most countries they are based on government-run labour force surveys, which are intended to be nationally representative samples. In this way, the LIS and LES represent one of a very small number of accessible resources with comparative national data on social stratification and ethnic / nationality group[9].

Only some surveys contained in the LIS and LES datasets provide ethnicity or nationality data which could be used to compare patterns of social stratification (see table 1; our attention was restricted only to the most recent dataset for each country).

[8] The data are harmonised at the CEPS centre in Luxembourg, utilising a range of international classification such as ISCO for occupations and ISCED for educational levels. This has the advantage that many countries can be directly compared using the same variables, but the disadvantages that the number of covariates that can be harmonised in practice are quite limited, and the process of harmonisation is inevitably 'broad-brushed'.

[9] The ISSP surveys concerning national identity (eg Svallfors 1995) have a similar status, but lack the extensive detail on measures of social stratification.

Table 1 : Utility of LIS and LES surveys for an assessment of social stratification by ethnic / nationality groupings

Country, Year	Included? *(comment)*	Country, Year	Included? *(comment)*
LIS : Luxembourg Income Study			
Australia 94	Yes	Italy 95	No (no appropriate data)
Austria 87	No (data too skewed)	Luxembourg 94	Yes
Belgium 96	No (data too skewed)	Netherlands 94	No (no appropriate data)
Canada 94	Yes	Norway 95	No (no appropriate data)
Czech Rep. 92	No (no appropriate data)	Poland 95	No (no appropriate data)
Denmark 92	Yes	Taiwan 95	No (no appropriate data)
Finland 95	No (no appropriate data)	Russia 95	Yes (some values unclear)
France 94	Yes	Slovak Rep. 92	No (no appropriate data)
Germany 89	Yes (1994 data inappropriate)	Spain 90	No (no appropriate data)
Hungary 94	No (data too skewed)	Sweden 95	Yes
Ireland 87	No (no appropriate data)	Switzerland 92	No (data too skewed)
Israel 92	Yes	UK 95	No (no appropriate data)
		USA 94	Yes
LES : Luxembourg Employment Study			
Austria 91	Yes	Poland 94	No (no appropriate data)
Canada 97	No (no appropriate data)	Slovak Rep. 94	No (no appropriate data)
Czech Rep. 94	Yes	Slovenia 95	No (data too skewed)
Finland 90	Yes	Spain 93	No (Appropriate ethnic / nationality data, but no income or occupation data)
France 97	Yes	Sweden 90	Yes
Hungary 93	Yes	Switzerland 97	Yes (but not language)
Luxembourg 92	Yes	UK 89	Yes
Norway 90	No (no appropriate data)	USA 97	Yes (no 'Hispanic' category)

Table 1 shows that in most countries in the LIS and LES where the discussion of ethnicity and social stratification is well developed, some information is available which makes an analysis realistic. Notable exceptions where sizeable ethnic minority communities cannot be analysed are Belgium, the Netherlands and Spain. The data available for Switzerland and Germany unfortunately does not engage with the core ethnic referents of each country (in Switzerland this is language but the LES data identifies nationality; in Germany this is

nationality but the 1994 LIS data only identifies status with regard to the former East and West Germany). However, other countries without adequate data for a quantitative analysis of ethnic stratification are mainly those where the number of ethnic minority residents is relatively small, and the political discussion of ethnic minority groups is relatively undeveloped.

1.3 Theoretical Framework

A relatively lucid way of assessing the comparative position of ethnic / nationality groups is to focus our analysis around the historical construction and position of ethnic / nationality groups within each host nation, with respect to an 'autochthonous' or dominant group (cf Panayi 1999). Within this framework we are able to define principles which sort both the countries examined and the ethnic / nationality groups within countries. Following Heckman and Bosswick (1994), we first sort the countries according to their historical patterns of immigration and constituency of ethnic groups. Following Panayi (1999), we sort ethnic / nationality groups as those, cross-classified with respect to Weberian components of ethnicity, who developed from one of three origins with respect to the autochthonous / dominant group, namely 'dispersed peoples', 'localised minorities', and '(post-war) (economic) immigrants'[10]. Since the vast majority of the ethnic groups analysed here are in fact associated with immigrant groups, we further subdivide immigrant waves (or their descendants) according to the geographical and economic positions of the countries of origin (cf Stille 1999). Our two typologies are summarised in table 2.

Table 2: Typology of countries studied, and typology of the derivation of ethnic / nationality groups within each country

Country types	**Ethnic / Nationality groups**
- Countries of Classical Immigration - Western European Countries - Nordic Countries - Central European Countries - Eastern European Countries	- Autochthonous / descendants of dominant immigrants - Ethnic differences within autochthonous / dominant groups - Dispersed peoples and localised minorities (regional minorities / migrants; ethnic clusters) - Historically specific (descendants of) international migrants - Other (descendants of) immigrants from : Western Europe; Northern Europe; North America ; Australasia; Southern Europe; Eastern Europe; South America; Africa; Asia

Our perspective is therefore flexible enough to be adapted to any of the broad coalition of ethnic / nationality referents used. Other cross-national reviews using comparable typologies have been made with respect to specific elements of ethnic / nationality group

[10] Payani's (1999) typology is developed for European countries. It proves largely adequate in differentiating ethnic groups across the world if the category of immigrants is extended to include the descendants of earlier waves of economic (and refugee) immigration.

positions (eg racism - Hargreaves and Leaman (1995); immigrant status - Heckmann and Bosswick (1994); religion - Lewis and Schnapper (1994)). Stille (1999) conducts a closely comparable review of the labour market position of minority groups, although his analysis is limited to countries in the EU.

Countries of Classical Immigration (CCI) : Australia, Canada, Israel, United States

These westernised countries feature a majority resident population who could be regarded as the descendants of international immigrants. The current populations are a 'melting pot' of citizens with recent or longer term immigrant backgrounds from a wide range of origin countries. Nevertheless, this pluralist model is offset by the demographic and cultural dominance of a single 'white' ethnic group of originally Western and Central European immigrants[11]. Outside this dominant group, ethnic / nationality minorities can be identified, predominantly associated with distinctive waves of immigrants, but also including groups of 'localised minorities' comprising the original, displaced autochthonous ('aboriginal') populations. Because many CCI minorities are not first generation immigrants, the preferred measure of minority group status would involve a subjective measure of ethnicity.

Economically, CCI's can be characterised as prosperous, although they may feature significant social stratification and a large number of relatively poor residents. In particular, in an issue of great political interest, some of the poorest communities in CCI's are *de facto* segregated groups of ethnic minorities. In general, it is hypothesised that ethnic / national minority groups in CCI's experience economic disadvantage, although there is some diversity between different minority groups. This diversity is hypothesised to be a function of the compounded effects of original immigrant status, discrimination against minority groups, and persistent cultural differences between groups, see Jones (1998).

The governments of CCI's have traditionally followed *'laissez faire'* economic policies with respect to social stratification. However in recent years the governments of CCI's have passed laws prohibiting ethnic discrimination, and have developed policies encouraging the reduction of any social stratification associated with ethnic groups.

Western European Countries (WEC) : Britain, France, Luxembourg

In Western European countries, the majority of the current population could be described as 'autochthonous', namely the long term descendants of the original resident populations. In the latter half of the twentieth century, Western European countries experienced increasing settlement by European and non-European (economic) immigrants and subsequently their descendants; many of the latter immigrants came from countries

[11] A variation is seen in Canada, where the dominant group is divided between French-speaking Canadians with ultimately French ancestry, and English-speaking Canadians with ultimately British ancestry

associated with historical patterns of colonialism[12]. In most terms the descendants of different immigrant groups can be identified into ethnic minority groups. Although WEC's have populations of localised minorities and dispersed peoples, these are demographically small and cannot generally be identified through social survey analysis.

Aside from the nature of their histories of international settlement, the structure of social stratification in WEC's closely parallels that of CCI's : internationally prosperous, WEC's also exhibit significant social inequality, in which ethnic / national minority groups often occupy the least advantaged positions, and in particular inhabit some of the poorest communities.

A powerful hypothesis in WEC's involves ethnic diversity in social stratification. Different immigrant entry conditions and cultural values have differential consequences on social stratification (eg Peach 1997). We may expect difference between ethnic / nationality groups in the relative impact of immigrant entry conditions. To assess this the most desirable measure of ethnic / nationality group membership would again be subjective ethnic identity.

Central European Countries (CEC) : Austria, Germany, Switzerland

Central European countries share several features with Western European countries. They may again be regarded as economically prosperous, and their histories of ethnic / national minority populations involve the introduction to a majority autochthonous population of a moderate number of residents from readily identifiable minority groups. However the origins of those immigrants tend to differ - fewer minority group members tend to be from other continents due to weaker colonial histories than the WEC's. Most minority group members in CEC's tend to be either economic migrants from poorer countries close by, or refugees, particularly from the Former Yugoslavia in the last decade. Such groups have largely moved to CEC's since 1945, so whilst an ethnic measure of group membership may be desirable, in practice a nationality based one may be adequate for many purposes.

CEC's have relatively strict citizenship policies, in which economic and refugee immigrants are often not initially granted full citizenship rights. If it assumed that immigrants to CEC's do generally desire full citizenship, then two different models of ethnic / nationality group integration are conceivable. On the one hand, minority groups in CEC's may behave as "model citizens" in an effort to attain citizenship, and in

[12] Our placement of Luxembourg in the WEC group could be debated. Luxembourg does not have the colonial history of Britain and France, and most of its immigrants entered the country initially as temporary labourers, resembling patterns in Germany for example. However Luxembourg's economic and cultural history, and current economic structure, more closely resembles France than any other country in our current discussion

consequence attain relatively favourable economic positions. On the other hand, the marginality of the legal status of minority groups in CEC's may contribute to more general patterns of economic marginalisation and exploitation, whilst the ready identification of those without citizenship may also ease the path of xenophobic reactions to the minority groups from members of the autochthonous population.

Eastern European Countries (EEC) : Czech Republic, Hungary, Russia

A central demographic feature of many EEC's is the presence of majority autochthonous populations amongst whom live substantial numbers of localised and dispersed ethnic / nationality minorities, including those dispersed minorities who moved in recent years as a consequence of political restructuring such as boundary changes and the emergence of new states. Many of the minority groups in EEC's share certain ethnic features with the autochthonous / dominant population. For this reason any observed differences between these minority groups and the autochthonous group would not be expected to be a consequence of differing cultural value systems (as may be in other types of countries), but instead may result from different conditions at immigration or from discrimination between groups. An ethnic measure of ethnic /nationality group would be a desirable way of distinguishing these minority groups, although a nationality measure may be adequate as much of the population movement is associated with recent generations.

The EEC's are also influenced by a recent transition from state socialist governments to capitalist market economies, with consequences including relative international poverty and a lack of political stability. The theorised consequence for ethnic / national minority groups involves even more pronounced poverty as the already economically disadvantaged are the first to suffer in times of crisis.

Another prominent feature of these former state socialist societies is the relatively high levels of educational attainment amongst both men and women. One can hypothesise therefore that educational level will have a greater significance in these countries in determining patterns of social stratification.

Finally, a characteristic of both EEC's and some CEC's is a recent history of the persecution of localised and dispersed minority groups, such as the Roma and Jews. For this reason the current position of those groups, when identifiable, may be expected to be one of intense social and economic marginalisation. Another consequence is the hypothesis that such societies remain characterised by relatively high levels of ethnic prejudice and discrimination.

Nordic Countries : Denmark, Sweden, Finland

Nordic countries exhibit a dual pattern of ethnic diversity : on the one hand, well established groups of localised minorities (such as the Sammi) have existed there for centuries; on the other, recent waves of post-war immigrants (often refugees from conflict zones such as Chile and Somalia) have brought quite ethnically distinct populations into the fabric of these relatively small, economically prosperous, nations. To analyse all of these groups, the desirable measure of minority group status in NC's is again subjective ethnicity.

In international comparisons the NC's stand out as countries with widespread prosperity, high levels of welfarism and very limited poverty. The also exhibit relatively high levels of state intervention and consensual politics. Furthermore in NC's governments have typically taken strong measures to increase the economic integration of recent immigrants. Nevertheless the minority group populations of the NC's would generally be expected to occupy different economic positions. In the case of post-war immigrants these would be positions of disadvantage due to their disadvantaged status at the point of immigration. In the case of localised minorities these would be both advantage and disadvantage, due to different cultures of education, geographical mobility and language between the groups.

Generalised theories

Finally, we introduce a number of generic theories on the position of ethnic groups within any country's social stratification order. First, the 'racism / discrimination hypothesis' would suggest that ethnic groups suffer a disadvantage in social stratification which cannot be explained by human capital and social characteristics. This can be tested by assessing whether ethnic groups obtain equal social stratification positions *ceteris paribus* (eg Leslie 1998). A complication, however, is that such evidence of inequality could also be attributed to *unmeasured* differences between groups in social characteristics and human capital, suggesting that the observed difference is not unequivocally the result of racism or discrimination. Karn (1997) developed the terminology of 'ethnic penalties' to indicate such an unexplained gap or penalty between groups. In the analysis presented here we can test the racism / discrimination hypothesis by asking whether our analysis supports evidence of 'ethnic penalties'. The complement of the racism / discrimination hypothesis, as tested through ethnic penalties, is the argument that all differences in social stratification between ethnic / nationality groups can be attributed to 'legitimate' differences in social characteristics and human capital.

The 'assimilation hypothesis' responds to the position of minority groups as recent immigrants, and anticipates differences between groups with different histories of immigration conditions. It suggests that a number of generic factors hinder the ability of immigrants to obtain the same social stratification rewards for their human capital as the autochthonous population, such as language problems, job availability on arrival, and

relatively weak information networks (Borjas 1992). The extent of this disadvantage would vary between groups according to the conditions of immigrant entry. However, over time and between generations, these disadvantages are expected to decline (cf Iganski and Payne 1996), whilst cultural differences between immigrant groups could influence the rate of this assimilation (Gazioglu and Sloane 1994). (In an alternative model however, immigrants may be expected to obtain worse jobs than the normal population, but still receive high incomes due to a process of "compensating differentials", though this benefit would then decline in later generations (Gazioglu and Sloane 1994)). The assimilation hypothesis is compatible with the racism/discrimination hypothesis, in that both mechanisms can work simultaneously without contradiction. Indeed, in comparable cross-national analyses, Stille (1999) and Borjas (1992) have presented conclusions in broad support of both the racism / discrimination hypothesis, and the assimilation hypothesis.

The 'enclave' (eg Mayhew and Rosewell 1978), or 'ethnic mobility trap' (Heckman 1992), hypothesis suggests that ethnic / nationality minority groups tend to form distinct labour markets largely within their own communities. This would be evidenced by distinctive occupational structures between groups, but not necessarily by income differences. The propensity to do this might vary between minority groups, influenced by different cultural value systems : for instance Islamic minority groups in mainly Christian countries may be particularly inclined to form enclaves.

Finally the 'cultural difference hypothesis' suggests that the unique cultural characteristics of a group determine its members' economic position, overriding the influence of any other factors. Thus we may expect an ethnic group culturally very similar to the autochthonous / dominant group to have a similar economic position regardless of other differences, and a culturally distinct group to be very different. Evidence for this hypothesis would be an ethnic structure to a country's order of social stratification which is aligned with cultural differences, but to some extent conflicts with patterns associated with other factors, such as immigration or differential discrimination. For this reason the cultural difference hypothesis can only be tested in a country if structures of cultural difference do not coincide exactly with structures related to other factors[13].

In the next sections, we try to engage the points raised in this discussion with our results from the descriptive analysis and development of the SOR models.

[13] For example, in the USA it could be argued that members of the Asian and Hispanic groups share similar experiences in terms of immigrant entry conditions and discrimination, but are culturally very different. The cultural difference hypothesis could therefore be tested, and indeed accepted, as an explanation for differences between the position of these groups in the USA's structure of social stratification. On the other hand, in Britain the cultural difference hypothesis could not be tested as an explanation for the disadvantaged location of members of the Bangladeshi group. Although Bangladeshis tend to be culturally very different from more advantaged ethnic groups, they are similarly differentiated in terms of immigrant entry conditions.

Section 2 : Construction of the SOR metrics

2.1 Countries of Classical Immigration

Australia 1994 LIS (Australian Income and Housing Survey 1994)

The LIS 1994 Australian dataset contains measures of nationality and immigration status. The latter divides the population between those born abroad and those born in Australia; the former uses country of birth. These measures mean that it is unfortunately impossible to identify Australian-born descendants of earlier waves of immigrants, nor the Australian 'aboriginal' population.

Table 3 shows results using a derived classification based on country of birth. It is evident that all minority groups have higher educational levels than the Australian born group, dramatically so in the case of Asians. However this is not clearly translated into advantaged employment and income positions, although the European / North American group (noticeably older on average than others), hold the most advantaged positions (cf Jones 1998, McDonald and Worswick 1999).

The SOR model results, estimated as a function of age and age-squared, gender, self-employment and unemployment position, and proportions with highest and lowest level qualifications, reveal an order which emphasises the distinctiveness of the European / North-American group and the role of age structures. The SOR ordering is very similar for men and women suggesting little ethnic-gender interaction (this is similar to the findings of Jones (1998)). We also see, in what becomes a recurring pattern, that the combined 'ethnic-gender' group SOR estimates (indicated 'dualf' and dualm') show no evidence of greater ethnic than gender group differences : the scores for the male ethnic-gender groups are clustered at one end of the derived scale, the scores for the female groups are clustered at the other, and within those clusters the distribution of scores between ethnic groups is similar. The substantial gap between the male and female scores suggests that the ethnic-gender SOR estimates add no more to our interpretation of ethnic orderings than is found from the gender specific SOR estimates.

Table3 : Australia 1994 LIS

Descriptives (all values except population N's are weighted with LIS weights)

	Population *percent of sample; sample N; Mean (median) age*	Education *% with degree / diploma; % with school level or below.*		Labour Force *% unemployed; % professional / managerial sector; % self employed*		Income *N wage earners; mean wage; mean household income (m+f)*	
		m	f	m	f	m	f
Australian	74.5	17.8	16.5	6.6	4.4	3364	2833
	10688	7.0	10.8	26.9	19.7	30.0	19.5
	40.0 (37)			10.5	5.1	37.0	
European / North American	16.4	22.3*	16.4	6.2	3.8	712	506
	2439	2.5*	6.4*	28.4	22.4	34.1*	20.8
	49.5* (47)			10.6	5.9	34.3*	
Oceania	2.2	22.0	22.8	6.2	7.2	116	96
	312	9.3	11.2	24.4	24.3	28.2	24.9*
	37.2 (37)			19.0*	3.1	36.2	
Asian	4.6	43.6*	27.7*	12.4*	10.4*	182	139
	625	4.6	7.3	27.2	17.1	28.8	21.0
	38.9 (37)			5.0*	6.5	35.6	
Other	2.6	26.8*	18.2	13.8*	7.4	79	58
	298	3.1*	7.2	31.5	12.3	32.8	16.5
	42.3* (42)			7.0	1.3*	32.8*	

** Significantly different from autochthonous / dominant group at 95%*

	SOR orderings				
	men	women	both	dualm	dualf
Australian	-0.4114	-0.1818	-0.2914	-0.3496	0.2935
Europe / N. America	0.8026	0.8087	0.8189	-0.2377	0.4006
Oceania	-0.4295	-0.5307	-0.4745	-0.3549	0.2562
Asian	-0.0072	-0.1635	-0.1210	-0.3170	0.2970
Other	0.0454	0.0673	0.0680	-0.3058	0.3177

Canada 1994 LIS (Survey of Consumer Finances 1994)

The Canadian LIS data does not allow us to identify the full range of component ethnic groups (based upon waves of immigration). Instead it is possible to identify whether a respondent's mother tongue was French, English or another language, and whether or not he or she was an immigrant. These variables were combined to produce the measure shown in table 4.

The descriptive data do not reveal strong patterns of ethnic difference in social stratification. The French and foreign born groups have marginally worse educational and occupational distributions. The largest group of respondents (English speaking Canadian born) is slightly younger than the other groups, unlike the situation in most other countries. (Other Canadian evidence reveals similar patterns, for instance Green (1999) suggests that selective immigration policies mean that recent immigrants to Canada often hold relatively favourable human capital and economic positions).

The descriptive data suggests a difference, albeit relatively small, between English speaking Canadian born respondents, and all others. This is also the dominant pattern of the SOR estimates for both men and women. This suggests a lack of ethnic diversity in inequality, and the dichotomising of ethnic relations. Unfortunately, this could well be a product of the lack of differentiation between ethnic groups in our derived categories. In this case, therefore, we have to be very careful in using the results of our analysis to assess the role of the immigration referent.

Table 4 : Canada 1994 LIS

Descriptives (all values except population N's are weighted with LIS weights)

	Population *percent of sample; sample N; mean (median) age.*	Education *% with degree / diploma; % with school level or below*		Labour Force *% unemployed; % professional / managerial sector; % self employed*		Income *N wage earners; mean wage; mean household income (m+f).*	
		m	f	m	f	m	f
English-speaking,	59.1	39.2	37.8	7.6	5.1	17960	16292
Canadian born	53020	29.7	28.8	23.4	25.5	31.7	19.9
	40.9 (38)			13.8	7.5	44.9	
French-speaking,	22.4	39.8	37.1	9.2*	5.6	5287	4451
Canadian born	15849	37.9*	39.8*	22.1	22.2*	28.9*	19.0*
	42.3* (40)			12.6*	7.1	38.0*	
Other, Canadian born	5.9	38.4	34.0*	7.2	3.9*	1214	1084
	4252	36.5*	39.4*	22.7	20.1*	29.7*	18.8
	43.0* (40)			15.2	6.8	42.5*	
Other, Foreign born	12.6	41.7*	32.3*	7.7	6.9*	2046	1749
	6904	33.9*	40.9*	20.1*	16.5*	29.9*	18.8*
	45.2* (44)			16.0*	7.1	44.1	

** Significantly different from autochthonous / dominant group at 95%*

SOR orderings

	men	women	both	dualm	dualf
English	-0.8521	-0.8476	-0.8541	-0.3661	0.3370
French	0.1399	0.1516	0.1575	-0.3504	0.3561
Other – Canadian born	0.3762	0.2577	0.3097	-0.3479	0.3585
Other – Foreign born	0.3360	0.4384	0.3869	-0.3493	0.3622

Israel 1992 LIS (Family Expenditure Survey 1992)

The Israeli ethnic / nationality data available through the 1992 LIS is a recategorisation of country of birth for Jewish Israelis, with the addition of a category 'not a Jew' for all non-Jewish Israelis. Table 5 shows a derived ethnic / nationality schema combining these variables. There are large differences in the age structure, whereby the non-Israeli born groups are far older than the Israeli born. This is a consequence of the recent development of Israel. There are also discernible patterns of social stratification : the Asian / African group, and in particular the non-Jewish group, show persistently lower educational levels, incomes, and worse labour force positions than the Israeli and European / North American groups. The European / North American pattern is further complicated as their educational levels and employment positions are close to those of the Israeli group, but their average incomes are noticeably lower. These findings are broadly consistent with other research (eg Benski and Leckerdarvish 1994).

The derived SOR orderings in Israel are a very poor representation of the social stratification position of the ethnic / nationality groups : they are dominated by differences in the age structures, and fail to reflect any great difference in terms of educational or occupational positions. On *a priori* grounds it would be expected that the SOR orderings would differentiate first and foremost between the Israeli and 'not a Jew' categories, locating the immigrant groups in intermediate positions (on the grounds that they share ethnic features with the Israeli born Jews). This would in fact be achieved if the SOR model was specified only in terms of educational and employment variables; however the inclusion of variables indicating age causes the SOR orderings of table 5 to be dominated by the age distribution. Here, a better SOR representation of social stratification would require estimates using either a restricted set of explanatory variables, or two or more dimensions (cf Hendrickx 2000), neither of which are reported here.

Table 5 : Israel 1992 LIS

Descriptives (all values except population N's are weighted with LIS weights)

	Population *percent of sample; sample N; mean (median) age.*	Education *mean years schooling*		Labour Force *% professional / managerial sector; % self employed*		Income *N wage earners; mean wage; mean household income (m+f).*	
		m	f	m	f	m	f
Israel	40.3 4841 32.8 (30)	13.0	12.7	33.3 10.9	34.4 2.8	1316 4.4 5.5	1304 2.4
Europe / North America	29.9 3625 52.3* (53)	13.2	12.3*	36.1 8.7	38.9 2.0	806 4.0* 4.4*	699 2.3
Asia / Africa	17.7 2051 52.5* (52)	10.7*	9.7*	19.1* 13.8	18.0* 1.5	539 4.2 4.4*	383 2.1*
'Not a Jew'	12.1 1401 36.1* (32)	9.8*	9.2*	10.3* 12.9	26.1 1.4	420 2.6* 4.1*	108 1.6*

** Significantly different from autochthonous / dominant group at 95%*

SOR orderings

	men	women	both	dualm	dualf
Israel	-0.5867	-0.8058	-0.5683	-0.5267	0.0675
Europe / N. America	0.5304	0.3141	0.5542	-0.0798	0.5135
Asia / Africa	0.4599	0.5020	0.4370	-0.1108	0.4604
'Not a Jew'	-0.4036	-0.0103	-0.4229	-0.4546	0.1306

USA 1997 LIS and 1997 LES (Current Population Survey March 1997)

The LIS and LES US datasets contain measures of subjective ethnic group. These are coded into a restricted number of categories, and it is noticeable that the 1997 LES data omits one of the major categories, 'Hispanic', as analysed in current literature.

The descriptive data in tables 6 and 7 reveal a strong association between ethnicity and social stratification in the USA. Age differences between the different groups are significant but relatively moderate in comparison with some of the other countries investigated. More noticeably there are marked differences in educational levels, employment positions and income patterns between the groups : on each measure the white and Asian / Pacific groups fare relatively well, whilst the Black, Hispanic and Native Americans levels are dramatically inferior. The Asian / Pacific groups are simultaneously over-represented in the most and least advantaged educational groups when compared to the white group, suggesting a high level of internal heterogeneity within this broad category. Finally, the Black and Hispanic groups have lower levels of self-employment compared with those of the white and Asian / Pacific groups.

These descriptive patterns are carried through to the SOR orderings shown in tables 6 and 7. The age structure is a significant ordering force, as are patterns of educational and employment situation. This results in the closeness of the white and Asian / Pacific groups, contrasted with relative distance from the Black, then Hispanic, groups[14]. Therefore, the example of the USA is a situation where several facets of social stratification tend to have a consistent direction in their relationship with ethnicity, suggesting that the one dimensional SOR model may be especially appropriate.

The SOR orderings for the USA also show possible support for the model of gender interactions, as the gender specific orderings have slightly different structures. In this case, the combined position of ethnic groups as operationalised through human capital and social characteristics places the Asian / Pacific category much higher, and the black category lower, for men than it does for women. On the other hand, the combined ethnic-gender SOR orderings (“dualf” and “dualm”) fail to shed any further light on this issue, as the scores obtained for the ethnic-gender groups remain dominated by gender. Methodologically, this suggests that the comparison of gender specific orderings is a more fruitful way of assessing the interaction of ethinicity and gender than the modelling of combined ethnic-gender categories.

[14] The reversal in ordering between the white and Asian / Pacific groups in the 1997 LES data probably reflects that the category 'Hispanic' is subsumed by the category 'White'.

Table 6 : USA 1997 LIS

Descriptives (all values except population N's are weighted with LIS weights)

	Population *percent of sample; sample N; mean (median) age.*	Education *% with degree / diploma; % with school level or below*		Labour Force *% unemployed; % professional / managerial sector; % self employed*		Income *N wage earners; mean wage; mean household income (m+f).*	
		m	f	m	f	m	f
White	73.7	31.9	29.2	3.3	2.1	24,618	22,922
	72,999	5.3	4.9	29.3	32.3	38.1	21.7
	44.5 (42)			13.5	7.4	47.6	
Black	11.7	15.4*	18.5*	6.7*	5.7*	2,473	3,163
	9,079	9.4*	7.2*	15.6*	21.4*	24.7*	18.9*
	39.6* (34)			4.6*	2.3*	32.9*	
Hispanic	10.3	12.3*	13.7*	5.9*	4.4*	5,143	4,089
	14,393	25.3*	25.2*	11.9*	16.9*	22.8*	16.3*
	36.9* (34)			6.0*	3.1*	35.4*	
Asian / Pacific	3.7	45.0*	39.7*	3.6	2.5	1,162	1,113
	3,448	6.1	10.2*	33.9*	31.2	37.1	23.7*
	39.6* (37)			12.9	7.4	51.8*	
Native American	0.7	21.9*	17.8*	7.6*	6.7*	358	325
	1053	6.6	7.3	18.0*	16.5*	28.3*	17.9*
	40.2* (38)			9.3*	5.4	37.0*	

** Significantly different from autochthonous / dominant group at 95%*

SOR orderings

	men	women	both	dualm	dualf
White	-0.4671	-0.6632	-0.5798	-0.3769	0.2319
Black	0.0669	-0.0547	0.0203	-0.2977	0.3023
Hispanic	0.7556	0.7050	0.7305	-0.2193	0.4031
Asian / Pacific	-0.4453	-0.1668	-0.3255	-0.3648	0.2833
Native American	0.0899	0.1797	0.1545	-0.2966	0.3350

Table 7 : USA 1997 LES

Descriptives (all values except population N's are weighted with LES weights)

	Population *percent of sample; sample N; mean (median) age.*	Education *% with degree / diploma; % with school level or below*		Labour Force *% unemployed; % self employed*		Income *N wage earners; mean wage; mean household income (m+f).*	
		m	f	m	f	m	f
White	82.5	29.0	26.9	3.8	2.6	5543	5198
	111,923	8.0	7.5	14.9	9.3	6.3	4.3
	36.3 (35)					19.9	
Black	12.8	14.0*	18.2*	8.1*	6.0*	518	760
	13,692	10.3*	7.8	6.3*	3.0*	4.7*	3.7*
	30.8* (29)					14.1*	
American Indian	0.9	16.9*	15.3*	6.6*	6.8*	55	68
	1,788	13.3*	13.0*	11.7	6.6	4.2*	3.9
	30.7* (29)					14.2*	
Asian / Pacific	3.8	44.5*	38.9*	3.8	2.5	235	239
	4,451	7.1	11.1*	15.0	10.0	6.7	4.8
	31.8* (31)					22.2*	

** Significantly different from autochthonous / dominant group at 95%*

SOR orderings

	men	women	both	dualm	dualf
White	0.4296	0.4365	0.4502	-0.3999	0.3011
Black	-0.4823	-0.6074	-0.5392	-0.2971	0.4146
American Indian	-0.5128	-0.3760	-0.4568	-0.2939	0.3962
Asian / Pacific	0.5655	0.5470	0.5458	-0.4059	0.2849

2.2 Western European Countries

United Kingdom 1989 LES (Labour Force Survey 1989)

The UK 1989 LES study has a variable indicating the self-assessed ethnic group of the survey respondents. This variable resembles the 1991 UK census classifications which have come to dominate recent survey research in the UK (Owen (1996), cf Ballard (1997)).

It is unfortunate that the 1989 LES is the most recent study available, since a considerable literature has identified gradual changes in the positions of the minority groups identified during the 1990's (Modood et al 1997; Berthoud 1998, 1999, 2000; Pathak 2000; Sly et al 1999)[15]. Nevertheless the descriptive statistics revealed in table 8 are broadly in keeping with findings from other studies of the same time period (Jones 1993, Karn 1997, Sly 1994). First we see differences in the age structure whereby whites are older on average, and the other categories follow an order which is coincident with the length of time since their major waves of immigration[16]. We also see substantial differences in the distribution of educational levels between groups – highest levels are associated with the Indian and Other groups, and Caribbean women, whilst disadvantage is associated with Caribbean men and the Pakistani / Bangladeshi group. Finally in terms of the labour market there is evidence of both ethnic minority disadvantage (much higher unemployment and slightly lower average ISE status scores for members of the Caribbean and Pakistani / Bangladeshi groups), and the model of ethnic labour market enclaves (a higher chance than average that members of the Indian, Pakistani / Bangladeshi, and Other groups will be self-employed).

These patterns are broadly represented by the SOR orderings. From the descriptive data we would expect the major polarisation to be between the White and Pakistani / Bangladeshi groups, and this is indeed the case. However, the SOR model is a less informative reflection of the relative position of the other ethnic groups. If it represented primarily a dimension of advantage-disadvantage, we would expect the Other and Indian groups to be close to the White group, with the Caribbean group in a more disadvantaged location; we would also expect support for the model of ethnic-gender interaction, particularly with regard to the Caribbean group. This is not the case however, as unfortunately the SOR orderings for the UK data are dominated by differences in the age structure of the groups[17].

[15] A 1997 UK LES study became available in January 2001.

[16] Differences in current age structures in the UK are a function of two separate elements which are both coincident with the timing of major waves of immigration. First, new immigrants tended to be from restricted (relatively young) age groups, so that Britain's ethnic groups have older age structures when their main wave of immigration was longer ago. Second, ethnic groups in Britain exhibit markedly different fertility patterns; by chance, the groups associated with the most recent waves of immigrants are also those with the highest fertility rates (eg Coleman 1994).

[17] Lambert and Penn (2001) give a more extensive review of SOR constructions from survey sources in the UK, including alternative formulations of the SOR model which produce more satisfactory orderings.

Table 8 : United Kingdom 1989 LES

Descriptives (all values except population N's are weighted with LES weights)

	Population *percent of sample; sample N; mean (median) age.*	Education *% with degree / diploma; % with school level or below*		Labour Force *% unemployed; mean ISE score; % self employed*		Income *No income data for UK 1989 LES*	
		m	f	m	f	m	f
White	95.7	11.7	8.9	5.2	3.6		
	145,006	25.9	24.4	42.5	42.2		
	38.3 (36)			17.5	7.3		
Caribbean	0.9	4.8*	14.1*	12.5*	9.8*		
	1,366	34.1*	23.5	37.3*	38.9*		
	31.3* (28)			10.6*	3.6*		
Indian	1.4	17.2*	11.2	7.5*	4.6		
	2,155	18.8*	25.2	44.9*	42.4		
	28.8* (27)			25.1*	9.9		
Pakistani / Bangladeshi	1.0	6.8*	3.1*	16.1*	5.2		
	1,674	38.7*	52.3*	37.5*	40.0		
	22.5* (18)			22.1	15.5		
Other	1.0	20.6*	19.9*	7.3	5.4		
	1,504	14.8*	21.1	45.5*	42.2		
	26.6* (25)			23.2*	12.7*		

** Significantly different from autochthonous / dominant group at 95%*

SOR orderings

	men	women	both	dualm	dualf
White	-0.6294	-0.5447	-0.5907	-0.3913	0.2005
Caribbean	-0.3328	-0.3109	-0.3237	-0.3438	0.2439
Indian	0.0183	-0.0021	0.0166	-0.3103	0.3098
Pakistani / Bangl.	0.6258	0.7743	0.7162	-0.2215	0.4578
Other	0.3181	0.0834	0.1816	-0.2697	0.3245

France 1994 LIS (Family Budget Survey 1994)
and 1997 LES (Survey of the Employed 1997)

Although it is well known that French academic and political institutions oppose the use of conceptions of subjective ethnicity or race, discussion of status as an international migrant is permitted (eg Gineste 1999). Such data is available in both the French LIS and LES studies. The LIS information on ethnicity relates to the current nationality of the respondents : the categories 'French birth' and 'French, by naturalisation' therefore include a substantial number of people of non-autochthonous national origins, who in other contexts would be regarded as members of an ethnic minority. Additionally, many of the responses to the LIS question on nationality group are missing.

For the French 1997 LES, two measurements identifying ethnicity / nationality do not completely correspond. Table 9 shows the cases classified by a variable indicating nationality, and another indicating country of birth. An apparent paradox is that the nationality status 'French born' is attributed to a number of respondents who report a non-French country of birth. In fact, this category should be more appropriately regarded as 'French by birthright', as it incorporates people born in any country when at the time their status was politically French (those born in what were French colonies, or to temporarily ex-patriot French parents). Table 9 thus shows a derivation of ethnic / nationality group categories based upon this cross-tabulation, which is the one used in this analysis[18].

The descriptive patterns for the French categories, shown in tables 11 and 12, reveal substantial evidence of ethnic / nationality group differences. The age structure of the groups is polarised, with members of the Portuguese and Maghrebian categories being significantly younger than other groups. Educationally, the Portuguese and Maghrebian groups occupy the most disadvantaged positions, and this pattern persists in the occupational and income situations of the samples. The relative position of the other groups varies more between measures and also between the two surveys. Notable features include the high mean ISE scores and incomes of members of the 'French North African' group and the Western European group, and high levels of unemployment amongst the heterogeneous Other group.

In turn, the derived SOR measures tend to emphasise the difference between the Maghrebian and Portuguese groups on the one hand, and the advantaged French, French North African, Naturalised French and Western European groups on the other. There is some difference in the locations of the Portugueuse and Magrhebian groups between the two surveys which is not obviously related to the descriptive data. Closer inspection of the SOR model shows this to be a function of differences in the relative contribution of having no qualifications to locations in the SOR ordering, an example which is methodologically significant as it emphasises that the SOR orderings of any particular

[18] The countries and categories identified represent a selection of the numerically largest waves of immigrants. The primary feature of the new classification is the partitioning of respondents born in North Africa, between those reported to be “French by birth[right]”, and those retaining a non-French nationality.

dataset are a function of the combined information in the whole dataset. Finally, in the French estimates there is also evidence of ethnic – gender interactions. In both the LIS and LES surveys the SOR positions of Portuguese women is relatively better than that of Portuguese men, whilst the opposite is true of women from the Maghrebian and Other categories.

Table 9 : France 1997 LES : Country of birth, nationality, and derived measure

	Country of Birth						
	missing	France	Maghreb	Portugal	S. Europe	W. Europe	Other
Nationality	*(sample n; derived classification category)*						
missing	104 -9	227 1	1546 3	703 4	583 6	291 5	989 6
French born	2168 1	129092 1	3152 2	63 6	327 6	521 6	1068 6
French by naturalisation	17 1	1062 1	598 3	264 4	927 6	266 5	1069 6
Maghrebian	0 3	92 3	1402 3	7 3	0 3	1 3	5 3
Portugal	0 4	49 4	0 4	520 4	4 4	1 4	5 4
Southern Europe	0 6	26 6	13 6	13 6	389 6	2 6	7 6
Western Europe	0 5	10 5	6 5	18 5	1 5	258 5	54 5
Other	0 6	13 6	14 6	2 6	5 6	5 6	892 6
Derived Classification	**-9**	**1**	**2**	**3**	**4**	**5**	**6**
	Missng	**French by birth**	**French North African**	**Maghr-ebian**	**Portug-uese**	**Western Europe**	**Other**
Sample n	104	130381	3152	3651	1546	904	6968

Table 10 : France 1994 LIS

Descriptives (all values except population N's are weighted with LIS weights)

	Population *percent of sample; sample N; mean (median) age.*	Education *% with degree / diploma; % with school level or below*		Labour Force *% unemployed; % professional / managerial sector; % self employed*		Income *N wage earners; mean wage; mean household income (m+f).*	
		m	F	m	F	m	F
French born	91.5	11.2	6.4	4.8	6.5	4846	4442
	17,200	32.2	40.6	4.5	3.4	12.4	8.1
	49.3 (47)			16.5	8.0	17.5	
French (naturalisation)	3.0	9.8	10.0	6.2	6.9	131	136
	569	48.3*	55.7*	2.6	6.0	11.0	6.9*
	54.2* (53)			16.1	8.1	15.9*	
Maghreb	1.7	4.6*	1.9*	24.3*	16.0*	107	42
	332	75.2*	79.0*	1.6*	1.3*	7.1*	4.2*
	43.8* (43)			5.8*	0.8*	11.9*	
Portuguese	1.3	0.0*	1.8*	10.3	14.6*	96	72
	235	80.2*	77.6*	0.0*	0.0*	9.6*	5.0*
	41.9* (43)			7.3*	1.0	16.1*	
Other Europe	1.7	15.0	11.0	10.6*	9.1	93	60
	319	56.2*	48.8	1.1*	2.5	12.3	8.3
	49.3 (46)			9.6*	5.4	15.3*	
Other	0.8	26.8*	41.9*	20.5*	11.8	56	39
	159	31.6	47.1	2.4	2.4	12.8	6.4
	37.3* (35)			11.9	2.4*	17.4	

** Significantly different from autochthonous / dominant group at 95%*

SOR orderings

	men	women	both	dualm	dualf
French born	-0.4854	-0.4368	-0.4420	-0.3356	0.2138
French (naturalisation)	-0.3635	-0.4620	-0.4963	-0.3347	0.2065
Maghreb	0.6478	0.5636	0.5575	-0.2116	0.3703
Portuguese	0.2492	-0.1116	0.0618	-0.2652	0.2816
Other Europe	-0.2973	-0.0647	-0.1509	-0.3196	0.2665
Other	0.2492	0.5114	0.4700	-0.2311	0.3590

Table 11 : France 1997 LES

Descriptives (all values except population N's are weighted with LES weights)

	Population *percent of sample; sample N; mean (median) age.*	Education *% with higher degree; % with school level or below*		Labour Force *% unemployed; mean ISE score; % self employed*		Income *N wage earners; mean wage; mean household income (m+f).*	
		m	f	m	f	m	f
French born	88.0	0.9	1.6	5.5	5.6	28,164	25,276
	130,381	57.6	53.7	42.1	41.8	10.3	7.7
	45.2 (43)			14.6	6.5		
French North African	2.4	2.2*	3.6*	5.8	6.1	681	568
	3,152	53.2*	52.2	49.5*	45.8*	12.6*	8.6*
	53.7* (52)			19.1*	8.3		
Maghrebian	2.7	0.3*	0.1*	17.9*	11.8*	772	316
	3,651	78.7*	79.9*	35.6*	33.1*	7.3*	5.5*
	43.0* (43)			13.5	4.6		
Portuguese	1.1	0.1*	0.3*	7.2	5.8	544	465
	1,546	88.6*	84.7*	33.0*	27.0*	8.5*	4.7*
	42.9*			8.0*	1.7*		
Western Europe	0.7	0.8	0.6*	3.9	3.0*	177	171
	904	43.9*	42.7*	50.0*	48.9*	13.6*	8.8
	49.4*			18.7	12.2*		
Other	5.2	0.3*	0.7*	10.1*	7.4*	1,434	1,053
	6,968	59.8	61.2*	41.8	39.2*	10.0	6.8*
	48.3*			15.6	7.5		

** Significantly different from autochthonous / dominant group at 95%*

SOR orderings

	men	women	both	dualm	dualf
French born	-0.3511	-0.1991	-0.2084	-0.3014	0.2665
French North African	-0.2196	-0.4160	-0.3754	-0.3204	0.2489
Maghrebian	0.4344	0.6498	0.5355	-0.2450	0.3431
Portuguese	0.6477	0.4414	0.5699	-0.2274	0.3314
Western Europe	-0.4673	-0.4067	-0.4453	-0.3297	0.2484
Other	-0.0442	-0.0694	-0.0763	-0.2933	0.2790

Luxembourg 1994 LIS (Luxembourg Social Economic Panel Study 1994) and 1992 LES (Labour Force Survey 1992)

Information from Luxembourg is available from both the LIS and LES datasets, yielding the statistics in tables 12 and 13. In the LIS study the categories refer to a single measure of nationality, whilst for the LES study they refer to country of birth[19]. These measures capture the most significant categories of Luxembourg's minority group populations, namely two major waves of immigrants recruited as industrial labour from Italy and Portugal in the second half of the twentieth century. Unfortunately, the categories used miss other ethnic features of Luxembourg, namely language differences within the autochthonous population, and a population of Romanies in Luxembourg undetected by the LIS and LES datasets. Lastly, the LIS study has a relatively small sample size and, unlike the LES data, does not quite reproduce the demographic distribution of other research (cf Warner 1999).

Focussing primarily on the LES data, we see dramatic differences between variables relating to social stratification between the groups. The Portuguese and Italian groups have far lower levels of education than average, and much more disadvantaged labour market positions (it is also interesting to note that the Italians, but not the Portuguese, are relatively likely to be self-employed). Reflecting the earlier period of their main wave of immigration, Italians in Luxembourg tend to be older on average than other groups[20]. Western Europeans in Luxembourg, on the other hand, can be regarded as much more advantaged than other groups.

The SOR estimates from both Luxembourg datasets prove relatively satisfactory. The Portuguese are placed at one extreme, the Italians relatively close to them, then the Luxembourg and Western European groups occupy the other extreme (with the Western European group ranked beyond the Luxembourg group). This is exactly the order we would expect from a dimension representing advantage-disadvantage in human capital and social characteristics.

[19] Measures of both nationality and country of birth are available in the 1992 LES , and in practice they are very closely aligned.

[20] Unusually for a population, the median age of Italians in Luxembourg is greater than the mean age.

Table 12 : Luxembourg 1994 LIS

Descriptives (all values except population N's are weighted with LIS weights)

	Population *percent of sample; sample N; mean (median) age.*	Education *% with degree / diploma; % with school level or below*		Labour Force *% unemployed; % self employed*		Income *N wage earners; mean wage; mean household income (m+f).*	
		m	f	m	f	m	f
Luxembourg	81.4	11.8	6.3	2.0	1.6	917	523
	3251	24.4	38.6	9.8	6.9	11.0	7.3
	44.9 (41)					17.7	
Portugal	6.5	0.0	0.5*	3.7	1.2	116	88
	289	62.4*	66.8*	1.1*	1.5*	7.0*	4.2*
	34.2* (33)					14.8*	
Italy	4.9	0.2*	0.0	0.0	6.3*	54	47
	220	50.7*	52.6*	8.4	3.8	8.3*	5.1*
	45.2 (46)					14.2*	
Other	7.2	10.5	13.3*	5.5	1.7	79	52
	273	23.1	29.2	11.7	4.7	10.4	6.9
	44.1 (44)					17.6	

** Significantly different from autochthonous / dominant group at 95%*

SOR orderings

	men	women	both	dualm	dualf
Luxembourg	0.3786	0.3615	0.3659	-0.4045	0.2702
Portugal	-0.8373	-0.8121	-0.8315	-0.2004	0.5047
Italy	0.0707	-0.0074	0.0507	-0.3573	0.3388
Other	0.3880	0.4580	0.4149	-0.4033	0.2518

Table 13 : Luxembourg 1992 LES

Descriptives (all values except population N's are weighted with LIS weights)

	Population *percent of sample; sample N; mean (median) age.*	Education *% with degree / diploma; % with school level or below*		Labour Force *% unemployed; Mean ISE score; % self employed*		Income *No Income data avialble on Lux. LES*	
		m	f	m	f	m	f
Luxembourg	73.2	12.2	11.2	1.0	0.9		
	10,933	35.2	46.4	43.5	46.1		
	37.3 (35)			11.3	7.3		
Western Europe	10.7	15.9*	18.3*	1.1	1.5		
	1,722	23.8*	35.9*	48.8*	46.9		
	42.0* (41)			8.7	10.9		
Portugal	10.2	2.1*	2.5*	1.0	1.0		
	1,687	78.3*	82.1*	32.5*	31.0*		
	32.4* (32)			3.9*	2.8*		
Italy	3.0	6.4*	6.6*	0.7	0.9		
	468	62.6*	64.4*	39.1*	38.5*		
	48.2* (49)			12.5	5.4		
Former Yugoslavia	0.6	9.0	2.5*	4.1	2.7		
	97	58.8*	78.2*	34.9*	31.2*		
	35.0 (35)			7.8	0.0		
Other	2.3	9.5	15.0	3.2	3.3		
	390	37.0	43.2	44.6	42.4		
	34.9* (34)			11.5	12.1		

** Significantly different from autochthonous / dominant group at 95%*

SOR orderings

	men	women	both	dualm	dualf
Luxembourg	-0.4059	-0.3459	-0.3759	-0.3543	0.1944
Western Europe	-0.4904	-0.4543	-0.4826	-0.3718	0.1696
Portugal	0.7464	0.6810	0.7256	-0.1264	0.4318
Italy	0.0674	-0.1282	-0.0234	-0.2635	0.2470
Former Yugoslavia	0.1630	0.4094	0.2862	-0.2436	0.3698
Other	-0.0805	-0.1620	-0.1298	-0.2906	0.2375

2.3 Nordic Countries

Denmark 1992 LIS (Income Tax Survey 1992)

The Danish LIS data is obtained from a relatively small sample. Furthermore Denmark retains a predominantly autochthonous population (although immigration has increased in recent years, eg Madsen (1999)). Subsequently the LIS data, which contains an indicator of country of birth, represents members of ethnic / nationality minority groups very sparsely. (The referent to country of origin to measure ethnic / nationality group is more realistic for Denmark than many other countries, as Denmark has many more first generation immigrants than descendants of immigrants, Madsen (1999)).

Despite low numbers, the descriptive statistics of table 14 suggest some clear patterns of difference between Danish immigrant groups. The Turkish, Other European and Other groups have lower than average educational levels, and the Turks have a dramatically worse economic position. Immigrants from Nordic countries, on the other hand, are relatively advantaged. There is also evidence of difference in the age structures of the different groups. These findings echo Madsen's (1999) differentiation between immigrants from more and less developed countries.

In the earlier discussion, it was suggested that SOR orderings could help solve problems of under-representation of minority groups in survey analysis, by allowing for the substitution of a categorical factor with a metric. The Danish data provide a possible illustration of this point : the SOR orderings obtained are a plausible representation of an axis of advantage-disadvantage in human capital and social characteristics. Its use in more complex models of social stratification may well be a parsimonious solution to the problem of sparsity.

Table 14 : Denmark 1992 LIS

Descriptives (all values except population N's are weighted with LIS weights)

	Population *percent of sample; sample N; mean (median) age.*	Education *% with degree / diploma; % with school level or below*		Labour Force *% unemployed; % professional / managerial sector; % self employed*		Income *N wage earners; mean wage; mean household income (m+f).*	
		m	f	m	f	m	f
Danish	96.9	10.8	9.1	6.7	6.9	7056	6579
	20,785	15.5	20.5	17.9	7.6	18.3	13.1
	45.2 (44)			9.8	3.9	20.8	
Other Nordic	0.5	10.6	8.3	10.6	5.0	31	39
	107	55.3*	41.7*	14.9	6.7	21.4	13.8
	39.2* (39)			12.1	4.5	20.5	
Other Europe	0.9	7.1	1.2*	14.1	9.6	72	48
	182	64.6*	63.9*	13.1	6.0	14.9*	12.6
	36.1* (35)			4.5	5.5	17.4*	
Turkish	0.5	1.7*	0.0	31.7*	32.0*	35	22
	110	68.3*	82.0*	6.7*	0.0	9.8*	7.6*
	32.4* (30)			10.0	0.0	17.6*	
Other	1.3	2.9*	0.0	16.7*	9.1	54	36
	270	81.2*	87.1*	8.7*	3.8*	11.1	7.0*
	32.5* (30)			9.2	12.5	15.4*	

** Significantly different from autochthonous / dominant group at 95%*

SOR orderings

	men	women	both	dualm	dualf
Danish	-0.8152	-0.7089	-0.7639	-0.3777	0.2467
Other Nordic	-0.0928	-0.2651	-0.1894	-0.3221	0.2907
Other Europe	0.1232	0.0528	0.0916	-0.3047	0.3191
Turkish	0.3501	0.4610	0.4105	-0.2858	0.3576
Other	0.4348	0.4602	0.4512	-0.2789	0.3552

Finland 1990 LES (Labour Force Survey 1990)

In Finland, the registration of ethnic origin or race is prohibited by law (Santamaki-Vuori (1999)). Data from the Finnish 1990 LES identify language spoken, nationality, and whether the respondent was born in Finland or not[21]. Although this allows, in principle, for a wide variety of ethnic categories, in practice the sample representation is highly skewed : most of the sample are Finnish born Finn's who speak Finnish; almost all of those who do not speak Finnish are Swedish-speaking Finnish born Finns[22]; and only a very small number of respondents are foreign born non-Finn's from a variety of nationalities speaking various languages[23]. This prompted the 3 fold classification of ethnic / nationality group shown in table 15. At a minimum, this classification is successful in identifying the large and historically significant Swedish-speaking minority in Finland (Panayi 1999). On the other hand, it is unable to engage with an analysis of diversity amongst other minority nationality and language groupings (cf Santamaki-Vuori 1999).

Table 15 indicates a significant gap between Finnish and Swedish-speaking Finns, with the latter enjoying relative advantage in both educational levels and economic positions. The position of the Other group is ambiguous, showing both advantage and disadvantage in educational and occupational positions. This is unsurprising given its nature : it's largest component groups are Danes and Germans, whom we might expect to be advantaged in many ways, and Russians, whom we might expect to be disadvantaged.

With regard to the derived SOR estimations, it is apparent that the age structure pulls the Other group to one limit, but beyond that the differences in human capital characteristics create a gap between Finnish and Swedish speaking Finns. This evidence is descriptively interesting, but the utility of the SOR metric in this situation has to be questioned, as a simpler dichotomous representation of Finnish or Swedish spoken language would equally capture most of the difference of interest.

[21] An weakness in the data is that the codes for the nationality and country of birth indicators are already partially collapsed, so that it is impossible to distinguish people from specific backgrounds.
[22] The language question allows for the identification of a subsample of the indigeneous minority peoples in Finland, but there are only 9 such respondents in the 1990 LES dataset.
[23] At the time of the 1990 survey there were only approximately 26,000 foreign immigrants in Finland. This has increased in recent years; in 1997 there were approximately 81,000 (Santamaki-Vuori 1999).

Table 15 : Finland 1990 LES

Descriptives (all values except population N's are weighted with LES weights)

	Population *percent of sample; sample N; mean (median) age.*	Education *% with degree / diploma; % with school level or below*		Labour Force *% unemployed; mean ISE score; % self employed*		Income *No income info. available for Finland 1990*	
		m	f	m	f	m	f
Finnish born and spoken	93.5 33,737 41.3 (40)	8.5 39.5	5.7 40.7	3.2 40.8 17.5	1.9 41.5 9.9		
Finnish born, not spoken	5.6 2,182 44.1* (44)	13.9* 33.0*	9.3* 33.4*	1.2* 42.0 25.9*	0.7* 45.3* 9.8		
Foreign born	1.0 353 35.7* (32)	8.1 31.2*	3.7 28.9*	4.4 45.2* 11.6	2.3 41.1 8.6		

** Significantly different from autochthonous / dominant group at 95%*

SOR orderings

	men	women	both	dualm	dualf
Finnish born & spoken	-0.0320	-0.2177	-0.1219	-0.3673	0.4318
Finnish born, not spkn.	-0.6906	-0.5727	-0.6382	-0.2294	0.5466
Foreign born	0.7226	0.7904	0.7601	-0.5475	0.1657

Sweden 1990 LES (Labour Force Survey 1990)
and 1995 LIS (Income Distribution Survey 1995)

The only data available on ethnic / nationality groups in the Swedish 1995 LIS concerns nationality, whilst that in the 1990 LES concerns country of birth. It is therefore impossible to use these sources to identify either indigenous minorities in Sweden, or the descendants of international migrants[24]. One fortunate feature of the Swedish data, however, is the relatively large number of first generation immigrants represented in both surveys, prompting the categorisations shown in tables 16 and 17 below.

In both datasets similar patterns are revealed by the descriptive data. The major exception is that the LIS data based upon nationality generates a strongly skewed age distribution not present in the LES data based upon country of birth[25]. In both surveys, considerable differences in educational and economic positions between the groups are revealed. The Finnish and Other groups in Sweden have worse educational and economic positions on average, but whilst the Eastern European groups have higher educational levels, these do not translate into relative economic success. The Western European and Swedish groups in Sweden on the other hand occupy positions of relative economic advantage. (The disadvantaged position of the Finnish group as revealed by these data challenges Thoursie's (1999) distinction between Nordic and Non-Nordic immigrants as a major axis of labour market advantage in Sweden).

The SOR orderings for the LIS data are dominated by the age structure – it is the only significant variable structuring the order. Furthermore for the LES based SOR orderings minor differences in the age structure still prove structuring forces although other variables are more influential. Unusually, the influence of educational parameters in the LES-based order is bifurcated : both low and high educational levels are associated with a more negative SOR position. Overall however, the SOR orderings from both the LIS and LES data for Sweden do not reflect the order of advantage-disadvantage as anticipated by the descriptive data. In most circumstances therefore we would expect the one-dimensional specification of the SOR model for Sweden to be uninformative about ethnic stratification.

[24] Unlike the cases of Denmark and Finland, Sweden has a longer history of immigration and a moderate number of citizens who are the Swedish born descendants of international immigrants holding Swedish nationality (Thoursie 1999).

[25] This is an apt illustration of how alternative referents to nationality or country of birth can influence demographic conclusions : a categorisation using nationality, but not one using country of birth, will include some Swedish born children of foreign nationals, and will therefore be younger on average.

Table 16 : Sweden 1995 LIS

Descriptives (all values except population N's are weighted with LIS weights)

	Population *percent of sample; sample N; mean (median) age.*	Education *% with degree / diploma; % with school level or below*		Labour Force *% professional / managerial sector; % self employed*		Income *N wage earners; mean wage; mean household income (m+f).*	
		m	f	m	f	m	f
Swedish	94.9	18.5	18.5	6.8	4.6	8448	8168
	25,663	30.5	28.5	5.0	1.9	17.2	11.8
	46.7					20.0	
Finnish	1.1	12.2	11.2*	1.9*	1.8*	73	128
	284	41.4*	39.0*	0.7*	1.0	18.4	11.7
	44.9					19.7	
Western Europe	1.3	19.2	29.9*	7.0	6.6	138	95
	328	27.5	21.4	3.9	2.1	17.8	13.8
	42.4*					19.0	
Eastern Europe	1.1	27.8*	17.4	3.1*	0.6*	49	45
	292	19.8*	23.2	1.9*	0.3*	9.7*	6.0*
	36.6*					17.3*	
Other	1.6	23.1	22.6	1.7*	0.0	78	67
	380	34.5	27.6	3.8	1.3	8.7*	6.9*
	34.5*					15.0*	

** Significantly different from autochthonous / dominant group at 95%*

SOR orderings

	men	women	both	dualm	dualf
Swedish	-0.3647	-0.4375	-0.4090	-0.3737	0.2272
Finnish	-0.4509	-0.4384	-0.4336	-0.3949	0.2323
Western Europe	-0.2442	-0.1975	-0.2323	-0.3532	0.2772
Eastern Europe	0.6758	0.5635	0.6177	-0.1733	0.4007
Other	0.3839	0.5098	0.4573	-0.2318	0.3946

Table 17 : Sweden 1990 LES

Descriptives (all values except population N's are weighted with LES weights)

	Population *percent of sample; sample N; mean (median) age.*	Education *% with degree / diploma; % with school level or below*		Labour Force *% unemployed; mean ISE score; % self employed*		Income *No income data for Sweden 1990 LES*	
		m	f	m	f	m	f
Sweden	89.4	20.8	21.5	1.2	1.1		
	46,103	34.8	32.1	42.7	49.1		
	38.8 (39)			12.4	4.5		
Finland	1.5	8.7*	16.7*	2.7	1.3		
	867	51.1*	42.0*	37.0*	44.5*		
	38.6 (40)			6.3*	1.5*		
Western Europe	2.2	22.7	20.7	2.2	3.6*		
	1,281	28.8*	34.5	42.4	45.8*		
	36.8* (36)			9.7	3.6		
Eastern Europe	1.5	18.0	21.4	3.7*	2.6		
	886	33.4	37.1	39.2*	42.8*		
	36.1* (36)			10.1	4.4		
Other	5.4	22.1	18.5*	2.7*	2.7*		
	3,120	30.7*	38.3*	40.5*	44.3*		
	35.0*			10.4	4.3		

** Significantly different from autochthonous / dominant group at 95%*

SOR orderings

	men	women	both	dualm	dualf
Sweden	-0.5463	-0.7303	-0.6560	-0.3238	0.3088
Finland	-0.4423	-0.2462	-0.3270	-0.3204	0.3126
Western Europe	0.0326	0.2884	0.1104	-0.3168	0.3199
Eastern Europe	0.3229	0.1364	0.2495	-0.3120	0.3176
Other	0.6330	0.5517	0.6231	-0.3079	0.3220

2.4 Central European Countries

Austria 1991 LES (Microcensus 1991)

In Austria official statistics identify both 'ethnic minorities' (Austrian citizens from a distinctive ethnic tradition, comprising approximately 2% of the Austrian population in 1996), and immigrants (foreigners without Austrian citizenship, who may be born in Austria, comprising approximately 9% of the Austrian population in 1996), Lechner (1999). Unfortunately the 1991 LES data only carries a pithy measure of the latter, shown unaltered in table 18, therefore missing other features of the debate on ethnicity in Austria.

Table 18 reveals several patterns of association between human capital / social characteristics and ethnic / nationality group membership. Nationals from Turkey and the Former Yugoslavia are dramatically younger than the average Austrian population, have worse educational levels, and more disadvantaged economic positions; in each measure, Turkish nationals have more extreme differences than Former Yugoslavs. Members of the Other group on the other hand have both higher educational levels and economic positions, probably reflecting that many members of this diverse group come from relatively advantaged countries, particularly Germany and Switzerland.

Unsurprisingly, the consistent descriptive pattern is echoed in the generated SOR orderings. The Turkish group occupy one extreme and the Austrian and Other groups the other, with the Former Yugoslavs in an intermediate location, closer to the Turkish than Austrian position. This would seem to parallel a dimension of advantage-disadvantage.

Table 18 : Austria 1991 LES

Descriptives (all values except population N's are weighted with LES weights)

	Population *percent of sample; sample N; mean (median) age.*	Education *% with degree / diploma; % with school level or below*		Labour Force *% unemployed; mean ISE score; % self employed*		Income *N wage earners; mean monthly income*	
		M	f	m	f	m	f
Austria	93.5	6.2	3.8	0.9	0.7	11,539	10,188
	54,623	73.7	72.7	39.7	42.2	16.2	10.6
	38.5 (36)			13.3	8.4		
Former Yugoslavia	2.5	2.6*	1.3*	3.7*	2.4	192	170
	705	92.7*	92.0*	31.2*	28.6*	13.2*	9.4*
	29.9* (31)			2.7*	0.2*		
Turkey	1.5	0.7*	0.0	8.1*	6.7*	134	74
	562	95.3*	97.4*	29.9*	28.8*	13.2*	8.3*
	23.4* (21)			3.8*	0.0		
Other	2.4	24.7*	11.4*	2.9	1.6	99	72
	620	44.1*	53.1*	41.8*	39.1	15.8	12.4
	35.5* (33)			16.0	4.4		

** Significantly different from autochthonous / dominant group at 95%*

SOR orderings

	Men	women	both	dualm	dualf
Austria	0.3592	0.4535	0.4230	-0.4187	0.2295
Former Yugoslavia	-0.2040	-0.2504	-0.2242	-0.2887	0.3918
Turkey	-0.7168	-0.6978	-0.7122	-0.1631	0.4948
Other	0.5616	0.4946	0.5134	-0.4645	0.2190

Germany 1989 LIS (1989 German Socio-Economic Panel Study)

Although the most recent German LIS data available covers 1994, the most recent study with any consistent referent to ethnic / nationality group is the 1989 data. Here nationality in 1989 was measured, collapsed here into the categories of table 19. Again this measure ignores any members of ethnic minority groups with German citizenship. Since the process of obtaining German citizenship is relatively slow for immigrants and their descendants, it can be assumed that many members of ethnic / nationality minorities in Germany are not German citizens; on the other hand, a substantial wave of immigrants to Germany (namely that of 'ethnic Germans' from Eastern Europe and the former Soviet Union) have always held German citizenship and so are invisible to this analysis.

The German data in table 19 suggest an ethnic / nationality pattern to the age distribution, whereby all minority groups are significantly younger than the autochthonous category. There are also stark differences in educational and occupational positions : the Turkish, Former Yugoslavs and Southern European groups are much more disadvantaged than the German group, with the Turks at the furthest extreme. Members of the Other group do not fit neatly into this dimension, as their educational and occupational positions place them relatively close to the German group, but they are also the youngest group in the sample. These results are broadly consistent with the findings of Vogler-Ludwig (1999).

However, an interesting feature of the German data is that despite large disparities in social characteristics, human capital and occupational position (especially the proportion of men in professional / managerial jobs), the recorded incomes of earners, and the recorded household incomes of all households, are not dramatically different between the different ethnic groups.

The SOR orders reflect the big gap between those with German nationality and the relative deprivation of the Turkish, Former Yugoslavian and Southern European groups without German citizenship. Unfortunately perhaps, the ambiguous Other group is sorted by the SOR model to define the other extreme of the distribution. This is a function of its position in the age distribution – it is therefore highly likely that in this case a re-estimation of the SOR model de-emphasising age could lead to a substantively more satisfactory structure.

Table 19 : Germany 1989 LIS

Descriptives (all values except population N's are weighted with LIS weights)

	Population *percent of sample; sample N; mean (median) age.*	Education *% with degree / diploma; % with school level or below*		Labour Force *% unemployed; % professional / managerial sector; % self employed*		Income *N wage earners; mean wage; mean household income (m+f).*	
		m	f	m	f	m	f
German	92.4	22.3	11.7	2.8	2.0	2,027	1,510
	6480	4.0	3.3	26.0	10.0	45.5	24.4
	47.8 (47)			11.4	9.3	44.8	
Turkish	2.3	5.5*	2.0*	8.5*	6.1*	318	131
	804	26.7*	40.7*	0.0	2.2*	34.7*	19.5*
	35.8* (36)			6.7*	1.6*	41.4*	
Former Yugoslavia	1.1	4.1*	2.2*	10.6*	3.6	173	132
	438	29.9*	31.9*	1.7*	0.5*	38.1*	26.7
	40.8* (42)			2.3*	3.7*	43.1	
Southern Europe	1.8	4.6*	5.9*	3.0	3.6	387	217
	904	30.2*	38.1*	1.6*	3.9*	36.3*	22.5
	38.9* (39)			6.1*	4.0*	46.2	
Other	2.4	17.3	12.4	0.0	6.9	26	20
	214	47.1*	51.2*	24.2	0.0	45.1	25.3
	31.4* (26)			8.3	20.9*	43.3	

** Significantly different from autochthonous / dominant group at 95%*

SOR orderings

	men	women	both	dualm	dualf
German	-0.7239	-0.8321	-0.7849	-0.3999	0.2159
Turkish	0.0514	0.2724	0.1550	-0.3023	0.3405
Former Yugoslavia	-0.0185	0.0080	-0.0054	-0.3154	0.3138
Southern Europe	0.0032	0.0742	0.0365	-0.3107	0.3192
Other	0.6878	0.4774	0.5987	-0.2307	0.3695

Switzerland 1997 LES (Swiss Survey of the Active Population ESPA 1997)

Two referents to ethnic / nationality group are available from the Swiss 1997 data, namely measures of country of nationality and time since immigration when relevant. This is particularly disappointing as a data resource, since it is impossible to identify a major ethnic division in Switzerland associated with language spoken (cf Grin and Sfreddo 1998)[26]. Nevertheless Switzerland also has a relatively high immigrant population (de Coulon 1998), prompting the categories derived in table 20.

Descriptively there are clear differences between nationality groups in Switzerland. The groups identified from Southern European countries are united by lower educational levels and worse economic positions that the Swiss group (with the Portuguese at the furthest extreme), whilst the German and Other groups have situations relatively more advantaged than those of the Swiss. Respondents from the Southern European groups are also considerably younger on average than those from the other groups. These findings are consistent with the evidence of de Coulon (1998), who reported differential educational levels and income returns to education between three groups of 'natives', 'immigrants from migration countries' and 'immigrants from other countries'.

The SOR orderings in turn reflect the strong patterns of difference between the immigrant groups. The German and Swiss groups are located at one extreme and the Portuguese at the other, with the Spanish and Italian groups nearer the Portuguese position, and the Other group nearer the Swiss position. Thus although the SOR ordering ignores a major element of intra-Swiss ethnic relations, it provides a meaningful summary of the position of diverse immigrant groups.

[26] This division could be approximated for the LES data as indicators of regions in Switzerland are present, and the language divide is strongly associated with regions.

Table 20 : Switzerland 1997 LES

Descriptives (all values except population N's are weighted with LES weights)

	Population *percent of sample; sample N; mean (median) age.*	Education *% with degree / diploma; % with school level or below*		Labour Force *% unemployed; mean ISE; % self employed*		Income *N wage earners; mean wage; mean household income (m+f).*	
		m	f	m	f	m	f
Swiss	81.6	16.3	24.6	2.3	1.9	4141	3544
	14,407	14.5	26.6	41.0	43.2	66.9	34.2
	46.6 (45)			20.3	12.8		
Italian	6.6	8.5*	16.0*	6.3*	6.0*	245	148
	663	41.7*	56.2*	37.1*	41.6	52.7*	27.8*
	40.0* (38)			12.9*	7.2*		
German	2.1	47.8*	39.2*	5.1	2.8	82	59
	225	6.6*	16.1*	52.0*	49.3*	69.8	40.0
	45.0 (42)			12.5	20.4		
Portugal	1.1	2.4*	8.8*	4.4	8.0	36	44
	115	68.5*	84.7*	31.6*	38.2*	45.6*	33.9
	31.3* (32)			1.8*	0.0		
Spain	1.5	6.2*	19.1	11.3*	8.3*	66	39
	162	48.5*	40.3*	35.4*	37.0*	45.3*	24.1*
	36.1* (34)			5.4*	4.2*		
Other	7.1	35.0*	40.5*	11.9*	4.5*	210	177
	635	19.6	25.8	46.8*	48.2*	66.7	38.9
	37.5* (35)			11.5*	4.7*		

** Significantly different from autochthonous / dominant group at 95%*

SOR orderings

	men	women	both	dualm	dualf
Swiss	-0.4378	-0.3664	-0.3993	-0.3602	0.1893
Italian	0.1014	0.0784	0.0927	-0.2599	0.2972
German	-0.5193	-0.4258	-0.4638	-0.3797	0.1731
Portugal	0.6676	0.7972	0.7419	-0.1282	0.4569
Spain	0.2743	0.0986	0.1960	-0.2202	0.2991
Other	-0.0862	-0.1819	-0.1675	-0.2974	0.2301

2.5 Eastern European Countries

Czech Republic 1994 LES (Czech Labour Force Survey 1992-94)

A politically relevant ethnic map of the Czech Republic consists primarily of divisions within the population with Czech nationality, between Czechs and groups of dispersed and localised minorities (Panayi 1999). The 1994 LES includes a measure of subjective ethnic-national identity which identifies these groups along with immigrants from foreign countries (who are primarily from nearby countries). This measure is used in collapsed form in table 21.

The Czech descriptive data reveal substantial variation in the positions of different groups. We would expect the Romany group to occupy a position of extreme disadvantage, and this is indeed the case. Surprisingly however we also see evidence of educational and economic disadvantage amongst the Moravian, Slovak and Other groups when compared with the Czech group. There is a different pattern, however, to the age structure between groups, whereby the Moravian and other groups are older on average when compared to the Czech group.

Interestingly, the effects of educational and economic difference have a greater influence in structuring the SOR estimates than differences in the age distribution, which can be regarded as a positive sign for the SOR methodology[27]. The Czech and Moravian groups occupy one extreme, Romanies the other, with the Slovak and Other groups intermediate. From the descriptive data, this is a relatively informative mapping of the positioning of the Czech Republic's ethnic groups over an axis of avantage-disadvantage in social stratification.

[27] It would of course be possible to force such a result by respecifying the SOR equation for any particular country. The results in this text however utilise a SOR equation of fixed format for all cases.

Table 21 : Czech Republic 1994 LES

Descriptives (all values except population N's are weighted with LES weights)

	Population *percent of sample; sample N; mean (median) age.*	Education *% with degree / diploma; % with school level or below*		Labour Force *% unemployed; mean ISE score; % self employed*		Income *% reporting household income is good or very good.*	
		m	f	m	f	m	f
Czech	88.8	10.1	5.5	2.3	2.5	45.6	
	56,391	19.2	33.6	40.4	41.9		
	36.1 (35)			13.2	5.6		
Slovak	1.8	5.2*	5.4	7.1*	5.6*	32.6*	
	1,021	34.2*	53.6*	36.3*	36.8*		
	41.8* (41)			11.1	4.1		
Moravian	8.3	8.0*	2.9*	1.8	2.0	33.4*	
	4487	16.8*	38.1*	38.7*	39.7*		
	36.4 (36)			12.1	5.5		
Romany	0.2	0.0	0.0	29.4*	8.6	3.0*	
	121	84.3*	95.1*	27.0*	26.5*		
	27.6* (24)			0.0	0.0		
Other	1.0	5.5*	5.3	1.3	1.5	46.8	
	458	25.0	48.9*	39.9	35.4*		
	47.3* (50)			13.8	0.7*		

** Significantly different from autochthonous / dominant group at 95%*

SOR orderings

	men	women	both	dualm	dualf
Czech	-0.4869	-0.5889	-0.5520	-0.3933	0.2373
Slovak	0.3206	0.5216	0.4120	-0.2509	0.3717
Moravian	-0.4840	-0.4428	-0.4772	-0.3968	0.2564
Romany	0.6526	0.4209	0.5402	-0.1877	0.3565
Other	-0.0024	0.0893	0.0771	-0.3147	0.3216

Hungary 1993 LES (Labour Force Survey 1993)

The Hungarian 1993 LES data include measures of nationality and language spoken[28][29]. The former is used in table 22 below, and in practice its minority group categories also encompass almost all respondents who speak a minority group language.

As expected, Romanies in Hungary occupy positions of extreme disadvantage in educational and economic locations, reflecting their position, as in the Czech Republic, as a dispersed and persecuted minority. On the other hand we see that members of the Eastern European group hold a position relatively close to that of the Hungarian group, whilst members of the other group (predominantly Germans) have relatively advantaged characteristics. In this case, a pattern to the age distribution between the groups is in line with this order of educational and occupational positions.

The SOR estimates replicate this order of advantage-disadvantage, with the Romanies at one extreme and the Others, closely followed by the Eastern Europeans then the Hungarians, at the other. We see therefore another example of how, when the age distribution of the different groups is either not strong or is coincident with other measures of social stratification, our SOR orderings appear to reflect a single dimension of advantage-disadvantage.

[28] There is ambiguity in the derivation of both measures. The measure of nationality actually identifies Romanies within Hungary, who in most terminologies are an ethnic, not a nationality, group. In addition, the language spoken variable includes a small number of responses to categories which are not evidently language groups (for instance 2 people are categorised as 'catholic').

[29] The Hungarian 1994 LIS, not analysed here, also contains a dichotomous measure of ethnicity, namely 'not a Gypsy' or 'Gypsy'. This is not necessarily an unsuitable measure, but empirically it is so heavily skewed that it was not analysed.

Table 22 : Hungary 1993 LES

Descriptives (all values except population N's are weighted with LES weights)

	Population *percent of sample; sample N; mean (median) age.*	Education *% with degree / diploma; % with school level or below*		Labour Force *% unemployed; mean ISE score; % self employed*		Income *No income info. available for Hungary 1993 LES*	
		m	f	m	f	m	f
Hungary	98.0	10.2	8.6	9.0	5.3		
	50,029	43.5	54.4	39.0	43.4		
	41.9 (41)			10.2	5.3		
Romany	1.2	0.0	0.0	26.4*	8.3		
	760	90.7*	96.8*	26.4*	29.7*		
	35.1* (33)			7.5	14.4		
Eastern Europe	0.5	11.5	10.0	8.9	4.3		
	274	34.8	50.0	37.2	41.1		
	41.3 (40)			5.3	1.7*		
Other	0.3	20.1	16.0	3.0*	3.5		
	181	35.8	51.7	49.5*	47.9		
	46.7* (47)			5.5	4.7		

** Significantly different from autochthonous / dominant group at 95%*

SOR orderings

	men	women	both	dualm	dualf
Hungary	0.2154	0.2727	0.2480	-0.3870	0.2564
Romany	-0.8620	-0.8657	-0.8646	-0.1019	0.5635
Eastern Europe	0.2965	0.2845	0.2870	-0.4041	0.2503
Other	0.3502	0.3085	0.3295	-0.4164	0.2393

Russia 1995 LIS (Russian Longitudinal Monitoring Survey 1995)

The Russian LIS data take the form of a variable indicating nationality, and one indicating immigrant status, both of which have value labels identifying a host of communities from the former Soviet Union and a few other states. The value labels for the 'nationality' indicator were therefore coded into 6 categories based on the geographical location of the origin community[30].

From the data of table 23, Russia stands out as being the dataset reviewed in this study with the least marked ethnic / nationality group differences in social stratification. There are very few clear differences in the descriptive statistics between ethnic / nationality groups, and those that can be detected are as likely to show minority group advantage as disadvantage. This may be because a number of those from the minority groups identified are people who moved into Russia from a neighbouring state by 'positive selection' (for instance to attend university or take a senior job in the times of the USSR). However given the sheer size and diversity of the Russian nation, and the small subsamples of minority groups represented in the survey, the results here may also reflect sampling variability and errors.

The effect on the SOR orderings of the ambiguous patterns in the descriptive data are interesting : a pattern emerges for men which is almost reversed for women. Amongst men, a positive score is associated with greater age, higher educational levels and lower unemployment. This ranks those from the Western USSR (mainly Belarus and the Ukraine) at one extreme, and those from the Caucusus at the other, with those from the Non-USSR, Russia, the Baltic, and Asia, ranked in order from positive to negative within a middle section. For women a different order is generated : a positive score is associated with low educational qualifications, low age and a higher chance of being married. This ranks those from the Caucusus at a positive extreme with Russians at the negative extreme, with positive to negative intermediate positions being occupied by, respectively, Baltic, Asian, Non-USSR and Western USSR groups.

It may be unwise to read too much into this gender interaction in the SOR estimations, although it is not implausible that the characteristics which differentiate nationality minorities in Russia differ considerably between men and women. However, even in this particularly extreme situation, our combined ethnic-gender SOR estimation ('dualf' and 'dualm') does not indicate greater difference between ethnic-gender groups due to ethnicity than those due to gender alone. Indeed in no examples in this review has the combined SOR analysis of ethnic-gender categories proved any more informative than the analysis of men and women separately.

[30] Some of the communities named were readily categorised, but others needed resort to further references, here UNPO (2001), Vaga and Viikberg (2001). A few values remained unidentified from any obvious information source and 29 cases were dropped from the analysis for that reason.

Table 23 : Russia 1995 LIS

Descriptives (all values except population N's are weighted with LIS weights)

	Population *percent of sample; sample N; mean (median) age.*	Education *% with degree / diploma; % with school level or below*		Labour Force *% unemployed; % professional / managerial sector; % self employed*		Income *N wage earners; mean wage; mean household income (m+f).*	
		m	f	m	f	m	f
Russian	84.1	21.2	20.6	10.8	7.4	1,293	1,425
	6,587	4.0	11.2	8.5	11.6	49.9	30.9
	42.6 (41)			38.3	29.6	74.0	
Baltic	3.4	29.9	16.6	13.0	5.6	57	57
	265	3.3	11.9	11.1	13.2	37.9*	26.9
	41.2 (37)			38.6	29.9	65.2*	
West USSR	1.3	32.6	18.1	3.3	4.5	18	27
	103	2.5	19.5	15.8	10.0	64.7	46.4
	49.4* (46)			26.4	32.4	78.1	
Caucauses	6.5	16.9	9.1*	17.1*	7.5	86	65
	498	7.2	14.4	8.3	7.7	52.6	22.1*
	42.2 (40)			33.9	26.2	67.0	
Asian / Siberian USSR	2.6	27.4	20.3	15.8	9.0	33	24
	204	7.6	25.0*	12.8	12.7	28.7*	33.2
	44.6 (42)			43.6	36.5	58.3*	
Non-USSR	2.3	21.6	16.2	12.6	7.5	30	54
	185	2.2	12.1	11.6	7.2	45.6	33.3
	42.7 (39)			25.4	23.4	70.1	

** Significantly different from autochthonous / dominant group at 95%*

SOR orderings

	men	women	both	dualm	dualf
Russian	-0.0764	-0.5469	0.1079	-0.2770	0.2674
Baltic	-0.1378	0.1625	-0.0565	-0.2910	0.2895
West USSR	0.8550	-0.3168	0.7069	-0.3483	0.2762
Caucauses	-0.4480	0.7364	-0.5861	-0.2458	0.3058
Asian / Siberian USSR	-0.2080	0.1072	-0.3383	-0.2793	0.3072
Non-USSR	0.0153	-0.1425	0.1662	-0.2845	0.2799

2.6 Summary

At this stage a number of patterns in the derived SOR orderings can be identified. First and foremost, in most countries age structures tend to be central to SOR orderings, and often overwhelm the influence of any other stratification variables. This is most commonly the case when a categorisation is based upon a referent to nationality or immigration status (such as Israel or Sweden). However we see that other referents, such as subjective categorisations of ethnic / nationality groups, are often also associated with differential age structures, arising from the categories' intimate relations with immigration, and differential fertility (UK).

The dominance of age difference in many of the SOR estimates – particularly when it means the order of the SOR estimates is obviously not the same as an order of social stratification, for instance Israel – is not encouraging. On the other hand, it is fairly obvious that a country specific respecification of the SOR estimates could change this in any particular case; Lambert and Penn (2001 forthcoming) discuss how a meaningful SOR ordering can be constructed for the UK in spite of the strength of the age variable in differentiating between groups. In this review, the same explanatory factors were rigidly used in every country in constructing the SOR estimates, in the full knowledge that in some examples the derived order would be less satisfactory than in others.

Nevertheless within this framework, when the age structure of the ethnic / nationality groups is not dominant, or when it broadly coincides with the distribution of educational and occupational positions, we find a one-dimensional SOR ordering to usually be an adequate representation of advantage-disadvantage in human capital and social characteristics. Such examples were the SOR estimates for Canada, the USA, France, Luxembourg, Denmark, Austria, Switzerland, the Czech Republic and Hungary. If categorised in terms of the various referents to ethnicity used to construct their ethnic / nationality group categories, these countries are not obviously of the same type. It would appear therefore that the appropriateness of the SOR estimates is a function of country specific structures, but not referents in terms of the survey caregorisations used.

In terms of the typology of country types, there is also no clear pattern for when the SOR estimates are better and worse representations of social stratification, as countries which we consider to provide both good and bad SOR orderings of ethnic / nationality groups can be found within each group of countries. Furthermore there is not even any obvious pattern of greater and lesser stratification more generally as revealed in the descriptive statistics : as a general rule almost all countries exhibit ethnic / nationality group differences in social stratification patterns, and the extent of and variation in those differences cannot be clearly mapped to the typology of countries identified.

However, whilst the sorting of country types seems to make little difference, the sorting of minority groups is important. This is revealed both in the descriptive results and the SOR estimates. Thus extreme locations are often defined by dispersed (and persecuted) minorities (gypsies in the Czech Republic and Hungary), or by particular immigrant groups who arrived in the most disadvantaged circumstances (Pakistanis / Bangladeshis in the UK; Turks in Austria, Denmark and Germany; Portuguese in Luxembourg and Switzerland). It would seem that these types of minority groups experience extreme disadvantage throughout the range of countries, whereas groups of localised minorities, and immigrant groups from more advantaged backgrounds, tend to fare much better.

Finally in terms of our generalised theories, we see that the descriptive data and SOR orderings give some support for many of the suggested mechanisms. There is support for the hypotheses of immigration / assimilation, whereby groups identified with different waves of immigration tend to have different human capital and social characteristics according to the time and circumstances of their immigration (more distant waves tend to fare better). There is some support for the racism / discrimination hypothesis, at least in the terminology of ethnic penalties, as such penalties are observed in income and employment situations when not evident in educational and age differences (eg Australia). Limited support for the enclave model is found by certain minority groups' propensity to self-employment (eg UK, Australia), although many minority groups clearly do not have higher than average rates of self-employment. The hypothesis of cultural difference also finds support, as in some situations minority groups which have comparable human capital and immigrant situations achieve differential economic positions, putatively the outcome of cultural differences (eg Sweden). Furthermore in many cases both the derived SOR orderings and descriptive differences can be associated with more obvious cultural differences between groups (eg UK, USA, Germany, Austria), although this is not always the case (eg Israel). Lastly, those dispersed minorities identified who have been the victims of historical persecution – Roma in the Czech Republic and Hungary – occupy some of the most extreme positions of disadvantage seen in our review.

3. Modelling social stratification with the derived SOR representations

This section probes the possibility of using SOR representations of ethnicity in further analyses. To evaluate this, the results of four simple human capital style models (OLS equations predicting income or employment level (ISE scores), in each country for all employed men and all employed women separately, are compared (see Section 1.3). Model (A) uses no ethnic group indicators; Model (B) uses the SOR estimates as a single parameter; Model (C) uses separate dummy variables for each category of ethnic group; and Model (D) uses both the SOR metric and separate dummy variable indicators. Table 24 summarises the model results, displaying the adjusted coefficient of determination for each model, the sign and significance of the SOR parameters, and the number of ethnic category dummy indicators estimated as significant in each relevant equation.

The human capital models described in table 24 are attempting to measure the relative impact of indicators of ethnic / national group on the income / employment outcome, in the context of the other explanatory variables present. It would not necessarily be the case, therefore, that we would see ethnic effects in a human capital style model simply because we have seen that descriptively a country shows evidence of ethnic stratification in outcomes. For instance, it could be that all of the factors contributing to ethnic stratification are explained by other human capital differences. Alternatively, it could be that the lack of obvious ethnic stratification descriptively, masks genuine ethnic inequality, whereby different groups get unequal rewards for human capital, but the unequal distribution of human capital itself makes the descriptive outcomes misleadingly equal.

Table 24 : Role of SOR estimates as predictors of income or ISE employment status
(R2; sign of SOR parameters; number of dummy indicators significant)

Human Capital Specification :

Income / ISE score = age+ age2 + education + marital status + self-employment status + part time + {ethnicity} + error

	(A) *no ethnic variable*	**(B)** *SOR estimates*	**(C)** *Ethnic group dummies*	**(D)** *(B) + (C)*
Cells contain :				
{ ***R2 _ [sign of SOR if sig at 95%] _ [# ethnic dummies sig at 95% / max # possible****] }*				
Australia				
Male wage	0.402	0.402	0.403 0/4	0.403 0/4
Female wage	0.284	0.284	0.286 3/4	0.286 3/4
Canada				
Male wage	0.480	0.480 -ve	0.481 2/3	0.481 1/3
Female wage	0.365	0.365	0.365 0/3	0.365 0/3
Israel				
Male wage	0.256	0.275 -ve	0.285 3/3	0.285 -ve 3/3
Female wage	0.123	0.135 -ve	0.136 2/3	0.136 -ve 1/3
USA				
Male wage (LIS)	0.453	0.455 -ve	0.456 4/4	0.456 -ve 3/4
Female wage (LIS)	0.359	0.359	0.359 1/4	0.359 -ve 2/4
Male wage (LES)	0.401	0.404 +ve	0.404 2/3	0.404 2/3
Female wage (LES)	0.288	0.288	0.288 1/3	0.288 1/3
Britain				
Male ISE	0.272	0.272	0.266 2/4	0.266 3/4
Female ISE	0.229	0.229 -ve	0.224 3/4	0.224 1/4
France				
Male wage (LIS)	0.300	0.301 -ve	0.303 3/6	0.303 -ve 2/6
Female wage (LIS)	0.268	0.272 -ve	0.273 3/6	0.273 -ve 1/6
Male wage (LES)	0.311	0.316 -ve	0.318 5/5	0.318 -ve 4/5
Female wage (LES)	0.167	0.170 -ve	0.170 3/5	0.170 3/5
Male ISE (LES)	0.263	0.266 -ve	0.265 5/5	0.265 -ve 2/5
Female ISE (LES)	0.226	0.234 -ve	0.234 5/5	0.234 5/5

Table 24 : Role of SOR estimates as predictors of income or ISE employment status
(R2; sign of SOR parameters; number of dummy indicators significant)

	Human Capital Specification : *Income / ISE score = age+ age2 + education + marital status + self-employment status + {ethnicity} + error*			
	(A) *no ethnic variable*	**(B)** *SOR estimates*	**(C)** *Ethnic group dummies*	**(D)** *SOR ests + ethnic gp dums*
Cells contain :				
{ ***R2 _ [sign of SOR if sig at 95%] _ [# ethnic dummies sig at 95% / max # possible]*** *}*				
Luxembourg				
Male wage (LIS)	0.471	0.486 +ve	0.491 3/3	0.491 +ve 2/3
Female wage (LIS)	0.219	0.218	0.219 0/3	0.219 0/3
Male ISE (LES)	0.295	0.311 -ve	0.315 4/5	0.315 -ve 2/5
Female ISE (LES)	0.384	0.430 -ve	0.431 3/5	0.431 -ve 2/5
Denmark				
Male wage	0.527	0.528 -ve	0.529 1/4	0.529 -ve 0/4
Female wage	0.485	0.485	0.485 2/4	0.485 1/4
Finland				
Male ISE	0.268	0.268	0.262 1/2	0.262 1/2
Female ISE	0.485	0.485	0.485 2/4	0.485 1/4
Sweden				
Male wage (LIS)	0.525	0.527 -ve	0.527 2/4	0.527 -ve 1/4
Female wage (LIS)	0.371	0.377 -ve	0.378 2/4	0.378 -ve 2/4
Male ISE (LES)	0.299	0.300 -ve	0.297 3/4	0.297 -ve 1/4
Female ISE (LES)	0.202	0.205 -ve	0.202 4/4	0.202 -ve 2/4
Austria				
Male wage	0.379	0.380 +ve	0.381 3/3	0.381 +ve 2/3
Female wage	0.255	0.255 -ve	0.255 0/3	0.255 0/3
Male ISE	0.336	0.341 +ve	0.342 2/3	0.343 +ve 1/3
Female ISE	0.291	0.302 +ve	0.304 3/3	0.304 +ve 2/3
Germany				
Male wage	0.482	0.483 -ve	0.483 1/4	0.483 1/4
Female wage	0.222	0.222	0.223 1/4	0.222 0/4

Table 24 : Role of SOR estimates as predictors of income or ISE employment status
(R2; sign of SOR parameters; number of dummy indicators significant)

	Human Capital Specification : *Income / ISE score = age+ age2 + education + marital status + self-employment status + {ethnicity} + error*			
	(A) *no ethnic variable*	**(B)** *SOR estimates*	**(C)** *Ethnic group dummies*	**(D)** *SOR ests + ethnic gp dums*
Cells contain :				
{ ***R2 _ [sign of SOR if sig at 95%] _ [# ethnic dummies sig at 95% / max # possible]*** *}*				
Switzerland				
Male wage	0.472	0.472	0.472 0/5	0.472 0/5
Female wage	0.233	0.238 +ve	0.240 2/5	0.240 +ve 2/5
Male ISE	0.302	0.304 -ve	0.303 3/5	0.303 -ve 1/5
Female ISE	0.066	0.067 -ve	0.068 1/5	0.068 1/5
Czech Republic				
Male ISE	0.330	0.331 -ve	0.331 3/4	0.331 -ve 1/4
Female ISE	0.282	0.284 -ve	0.284 4/4	0.284 -ve 1/4
Hungary				
Male ISE	0.387	0.388 +ve	0.388 3/3	0.388 +ve 2/3
Female ISE	0.383	0.383	0.382 0/3	0.382 0/3
Russia				
Male ISE	0.058	0.058	0.063 1/5	0.063 1/5
Female ISE	0.101	0.103 -ve	0.103 1/5	0.103 -ve 0/5

Table 24 indicates whether a SOR representation of ethnic / national group is an independent predictor of social stratification within the human capital equation, and whether it is a better or worse representation than dummy factors for separate ethnic groups.

Firstly, in the models for 11 out of 16 countries the SOR representations for men or women are often or always significant, interpretable predictors of social stratification (indicated by the presence of the symbols “-ve” or “+ve” in the relevant cells of table 24). Interestingly, the countries involved do not completely correspond with the countries

where the SOR estimates were felt to be a good representation of an order of social advantage and disadvantage. In particular, the SOR estimate proves a predictor of social stratification in Israel, Sweden and Germany where it was judged a poor representation of ethnic / nationality group difference. In these cases, it would appear that the SOR parameter is detecting an element of ethnic difference (related to age) which does not particularly correspond with our descriptive view of social stratification in these countries. This is not incongruent with our model proposition, as we are simply finding that the determination of outcomes through human capital acts through ethnicity in (at least one) order other than that expected[31]. However, whereas in other countries the significance of the SOR parameter can be interpreted as the significance of ethnic / nationality group according to their pattern of general social stratification, in Israel, Sweden and Germany it is much harder to relate the SOR parameter to a wider conception of ethnicity.

More importantly, we see that in 7 of those 11 countries the SOR representation seems to add more to the model interpretation than the model with ethnic group dummies. Although the coefficient of determination is rarely greater with a SOR representation than in a model with ethnic group dummies (model (2) cf model (3)), we see that in these 7 countries (France, Luxembourg, Denmark, Sweden, Germany, Switzerland and the Czech Republic), the dummy indicator representation does not allow us to draw firm conclusions about all ethnic groups, whereas the SOR representation does this by default. In these cases, the SOR representation may indeed be a more parsimonious way of modelling ethnicity than the use of dummy indicators of ethnic / nationality groups.

This raises the related question of the SOR model's ability to represent small subgroups in survey analysis, as the non-significance of dummy effects is likely to reflect small subsample sizes. In a number of surveys we anticipated that the sparse representation of ethnic minority groups would problematise the analysis of minority effects (France LIS; Luxembourg LIS and LES; Denmark; Sweden LIS; Switzerland; Czech Republic; Hungary; Russia). The generation of SOR orderings proved no obvious statistical problem for all of these countries, and in 7 out of 9 cases the SOR estimates were felt to be substantively satisfactory. We also see that 7 of these cases fall within the class of countries where the SOR estimations are apparently a more satisfactory way of analysing ethnic group effects than is the use of dummy indicators. In these cases, the SOR parameter may therefore be a more inclusive way of dealing with the effects of ethnicity in determining outcomes

In terms of the variety of models in table 24 we can consider two aspects. Concerning gender, we see that, in general, human capital regressions explain more of the variation in the males' outcome than the females', and that this applies to ethnic / nationality group

[31] It may indeed act through ethnicity in more than one way in any country. For instance, if two dimensions for the SOR model were estimated which produced two separate orders for the ethnic / nationality categories, there would be no logical problem with both dimensions having significance in predicting a social stratification outcome.

effects as well : for instance in 6 countries (Canada, UK, Luxembourg, Denmark, Germany and Hungary), ethnic effects on stratification were detected for men but not for women. Concerning the difference between a wage and employment level (ISE) outcome, we do not see obvious patterns of difference between the measures' propensity to associate with ethnic / nationality group effects, but we do note that there is a smaller difference in the gap between male and female equations for ISE outcomes than wage outcomes (eg France, Luxembourg, Sweden, Austria).

An important issue in our review is the influence of the type of referent used to construct the ethnic / nationality categories in each country. As with the descriptive data and SOR orderings reported in section 2, however, we do not see clear patterns of difference, associated with the referent used, in the ability of either the SOR construct or dummy variable indicators to predict social stratification as a function of the type of referent used in a country. For example, regardless of whether the referent used in a study is nationality, country of birth, language or subjective ethnicity, we see examples where the SOR parameters and dummy coefficients are both good and bad predictors of the outcome. Thus, although we know that the alternative referents used in different countries carry implications for the data associations and theoretical analyses, we have not found evidence that the variety of referents particularly hinders our style of descriptive analyses, SOR modelling, or human capital equations.

We can also try to relate the results of these regression models to the theories discussed in section 1.3. First, the role of the regression models does not follow an obvious pattern if related to our typology of countries. 11 countries (Israel, USA, France, Luxembourg, Denmark, Sweden, Austria, Germany, Switzerland, the Czech Republic and Hungary), show evidence of ethnic effects on social stratification outcomes within the human capital model - these represent a mixture of classes of countries, although all three CEC's do fall into this category. Of course, this conclusion is confounded because different models within country groups often do not use the same ethnic category referent (for example, the fact that we cannot say that all WEC's have strong ethnic effects in these models may be because Britain's ethnic category referent differs from that used in France and Luxembourg).

Instead, again in parallel with the results of section 2, a factor which does appear to account for differences in the role of ethnicity measures in human capital regression models is our classification of types of ethnic / nationality groups. Countries including either dispersed minority groups, or minority groups from a disadvantaged immigrant background (eg Czech Republic, Austria, France), are more likely to exhibit ethnic effects. On the other hand, in countries which have component groups from longer term immigrant groups and localised minorities (eg Australia, Canada, Finland), we see that descriptive ethnic / nationality group stratification is not accompanied by evidence of independent ethnic effects in the human capital formulation.

The racism / discrimination model, in its form of the ethnic penalty model, finds broad support from the human capital predictions. Any independent ethnic effect indicates some

form of ethnic penalty, whilst its absence is consistent with a lack of ethnic penalties[32]. Therefore, only in Canada, where ethnic minority groups are moderately represented in the samples, would it seem reasonable to say that there is no evidence of a structure of ethnic penalties over and above differences associated with human capital. Furthermore, in countries where we might expect the most extensive discrimination due to the presence of dispersed minorities in the ethnic / nationality group categorisation (Czech Republic and Hungary), we do indeed see strong evidence of additional ethnic effects within the human capital prediction model.

The assimilation model would suggest that any unexplained ethnic penalties should decline over time, possibly at different rates for different groups. This could be examined further with more complex regression models (eg separating out age cohorts, and where possible separating referents to immigration and ethnicity, cf Iganski and Payne (1999)). At the level of our analysis the assimilation hypothesis can only be tested by comparing countries according to the length of stay of ethnic / nationality categories, and according to the referent used in constructing the categories. We do indeed see that in countries / categorisations where the minority groups have relatively recently joined the country, there is often greater evidence of ethnic penalties than in other situations (eg Luxembourg cf Canada). There is also evidence of diversity in this assimilation. For instance in Austria we saw that the SOR orderings were spread out between different groups of immigrants from approximately equivalent time periods (Turkish and Former Yugoslavs), and that the Austrian SOR ordering is associated with an ethnic penalty (ie, Turk's in Austria may not have reduced their ethnic penalty as much as Former Yugoslavs).

The human capital representation may allow us to test for the theory of compensating differentials between ethnic groups. It suggests that in many cases immigrant jobs will be of a low level, but pay levels will be higher than expected for this level, in which case negative ethnic effects on employment would be greater than those on income. However our data show no support for such a process. In the countries where prediction of both income and employment level was possible, the nature and direction of ethnic effects was approximately equal for both the income and employment outcome.

Finally, we may be able to test the cultural difference hypothesis by asking whether the SOR representation of ethnicity is associated with a greater ethnic penalty in countries where it reflects more and less extreme cultural gaps. This is not unambiguously seen to be the case. For instance, the countries where the SOR representation predicts a relatively large ethnic effect - Israel, France, Luxembourg and Sweden – do not stand out as the countries where the SOR ordering reflects cultural differences between component groups. Equally, we can identify a number of countries where the SOR ordering is not a strong predictor of social stratification even though it coincides with a considerable cultural difference between groups (eg Britain, USA, Germany).

[32] Although it is also consistent with sparse data for ethnic / nationality minority groups.

4. Conclusions

We must treat our results with some caution. Our categorisations of ethnic / nationality groups are limited and we assume the comparability of all our other variables without discussion. Our theoretical framework uses a number of broad generalisations about the social and political structures of countries. Our construction of the SOR estimates is restrictively harmonised and could be improved by making country specific adjustments for different circumstances. Our analysis of ethnicity effects through human capital style functions uses relatively simplistic income and employment determination functions. Therefore our analysis is unable to meet several standard methodological prescriptions in comparative and statistical works.

Nevertheless we would argue that this investigation has demonstrated a number of points. First, in most countries it was suggested that our SOR representation of ethnic / nationality groups had substantive value, since it coincided with some order of advantage-disadvantage in social stratification. In the countries where this was not clearly the case, there was evidence that some modification to the SOR estimations, for instance through the specification of other covariates, or more than one dimension, would produce a more satisfactory order. Furthermore the SOR model estimates showed no obvious problems in situations with sparse data, and when subsequently applied as covariates in human capital prediction equations, it was found that SOR orderings often provided plausible and more inclusive representations of ethnicity than ethnic category dummy variables. Therefore, the SOR estimates, generating representations of ethnicity through consistent referents to social characteristics and human capital, could represent an advance in the comparative analysis of ethnic / nationality groups. (Although we found it possible to use the SOR estimates to comment on the interaction between gender and ethnic / nationality group effects on stratification, one variation of the SOR categorisations which jointly ranked ethnic-gender groupings did not prove informative in any circumstances).

It became apparent that some of the most important features of ethnic / nationality categorisations with regard to the human capital style analysis of social stratification involve difference in the age structures between groups. Stille (1999) highlighted similar differences by age structure as a core issue in labour market inequalities between ethnic groups. Clearly any analysis must be sensitive to this. It is a particularly relevant point when the referent to ethnicity is nationality or country of birth, although we also see evidence that group specific age structures remain when other referents are used. Although theories of ethnic difference separate themselves from theories of age difference, our analysis suggests that being a member of a group with a different age structure is itself an integral element of membership of an ethnic minority group in almost all contemporary societies, and perhaps should be theorised as such. The simpler prescription for sociological methods is to analyse ethnic / nationality groups within age cohorts whenever possible.

A connected point is our evidence on the relation between immigration and structures of ethnic difference. Both descriptively and through human capital models, we found that immigrant groups which had arrived in more disadvantaged circumstances were more likely to experience current disadvantage, and that there was evidence for a general decline in immigrant group disadvantage as the time since immigration increased (although the rate of this varied between groups). This suggests that much of the difference between ethnic / nationality groups may be a transient feature of disadvantage as immigrants. Again, this coincides with Stille's (1999) observation that the later descendants of immigrant groups in the EU tended to be more advantaged economically and educationally than the first waves of immigrants. At the same time however, our findings also suggest that residual ethnic / nationality group differences unrelated to immigrant status persist, for instance in our evidence in favour of the models of "ethnic penalties" and of cultural difference. Therefore it would be quite irresponsible to expect that ethnic / nationality group disadvantage will disappear once the initial effects of immigration have passed on.

Our final point is that this review reiterates the value of constructing measurements of ethnicity (as opposed to nationality or country of birth) in national level surveys, and the short-sightedness of a political objection to the measurement of the Anglo-American conception of subjective ethnic group. Whatever the referents used across countries, this review has shown that important differences between ethnic / nationality groups in social stratification exist, and that the survey analysis of those groups' positions can help answer theories of such stratification. However in almost all countries considered, it was suggested that an analysis of such issues would proceed more easily given a subjective measure of ethnic group, since there was evidence that ethnic minorities other than first generation immigrants existed (and in most cases would be increasing in their proportion over time). Although it would seem likely that members of ethnic minority groups as subjects will receive the attention of sociological analysts regardless of what data is available in national surveys, in this review we would hope to have shown that the multivariate analysis of the effects of ethnicity through survey data is an attractive method of analysis, and that a data construction position which obstructs this is less than helpful. We would hope that future survey designers might consider the greater value of an analysis of ethnicity over that of immigrant status or nationality, and design their variables accordingly.

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