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ARE THERE CLASSES IN POST-COMMUNIST SOCIETIES? A NEW APPROACH TO IDENTIFYING CLASS STRUCTURE

GEOFFREY EVANS AND COLIN MILLS

Abstract   If class theory has explanatory and descriptive power it should be possible to provide evidence that social classes exist as phenomena generic to modern industrial societies. This paper addresses this issue by examining the structure of class situations, as defined by job attributes, in two central European, post-communist societies – Hungary and Poland – and then comparing them with a benchmark Western society, Britain. Classes are identified through a latent structure analysis of job attributes and by assessing the correspondence between the latent classes estimated through this procedure and positions on two alternative indicators of class position – the Goldthorpe class schema and self-rated class identity. The structure of latent classes is found to be generally similar across all three societies, as is the correspondence between these latent classes and positions in the Goldthorpe schema in the two societies in which it is measured, and class identification. The main exceptions to this shared pattern relate to variations in the size and organisation of the agricultural sector and the distinctiveness of 'intermediate' class positions. The evidence indicates the presence of a considerable degree of cross-national consistency in the structure of class situations across diverse social and political contexts.

Key words: Eastern Europe, latent structure analysis, social class.

Class theory presumes the existence of classes, yet the link between conceptualisation and measurement is often tenuous. Some scholars, both Marxist and Weberian, recognise the importance of empirically grounding the concept of class (i.e. Erikson and Goldthorpe 1992; Goldthorpe 1987; Wright *et al.* 1989; Wright 1991, 1997), but systematic evidence on the existence of classes is notable primarily by its absence. There are, of course, many social mobility studies that provide evidence of restricted mobility flows between occupational groupings (for a few examples among many, see Featherman and Hauser 1978; Heath 1981; Erikson and Goldthorpe 1992; Marshall *et al.* 1997). But these fall short of identifying classes as such. They show that in a range of national contexts there is observable intergenerational transmission of something that is labelled 'class position', but they do not tell us how these class positions are identified in the first place. In other words, to observe that certain groupings of occupational positions have some degree of reproduction across generations does not in itself provide evidence that these groupings are theoretically meaningful occupational classes. The same point applies to the finding that certain groupings of occupations predict outcomes such as voting behaviour. Evidence that managers and professionals tend to vote for different

parties (see Savage 1991; Hout *et al.* 1995, or Brooks and Manza 1997), for example, does not mean that they constitute distinct classes; voting behaviour is not usually regarded as an attribute of class position (see Evans 1992, 1998).

To identify the existence of classes we instead need studies of *the structure of class situations*.[1] It is these structures which theories and conceptualisations of class – i.e. those advanced by Goldthorpe, Wright, Dahrendorf and others – refer to. This paper is an attempt to identify such class situations in a theoretically meaningful way, across novel and intentionally hazardous empirical terrain.

Evaluating the Existence of Classes

Our argument can be summarised as follow. First, evidence of the existence of classes requires the operationalisation of the concepts and distinctions identified in class theory. The aggregation of occupational titles into 'classes' does not itself constitute evidence of the existence of classes: occupational titles do not adequately identify what people 'do' in their jobs -- a point relevant to class theories such as Wright's (1985) or Dahrendorf's (1959) – or what their employment contract is – a point relevant to Goldthorpe's (1997; Erikson and Goldthorpe 1992) class framework. We need instead to measure the relevant class concepts by other means. This insight has led Wright, for instance, to devise measures of class in terms of criteria such as autonomy and control, position in the organisation and credentials (see Wright 1985; Marshall *et al.* 1988:116–21; Mills 1994). It has also produced a research programme into the validity of the Goldthorpe class schema (Evans 1992, 1996a, Evans and Mills 1998a) using measures of employment relations developed as part of a study of social class in Britain by Marshall *et al.* (1988).

Secondly, the class distinctions derived from class theory should preferably be generic to a wide range of societies. A useful theory of employment relations in industrial societies should not be limited in application to just one particular country. Unfortunately, established comparative studies of class formation have focused primarily on analyses of social mobility and, as we have already argued, it is class situations and not mobility rates that define classes. What attempts there have been to generate transnational indicators of class situation, primarily in terms of Wright's class construct, have proved ineffectual because of the presence of country-specific features leading to 'plausible but *ad hoc* historical interpretations for which there was little direct evidence'. (Myles and Turegun 1994:116).

Given these observations, the following questions suggest themselves:

(1) Are people clustered into distinct identifiable types of class categories on the basis of the *possession of the patterns of job attributes specified by class theory*? In other words, is there evidence of distinct class situations?

(2) Are these types of class categories consistent with the conventional instruments, based on aggregations of occupations, developed to measure social class? In other words, are classes identified on the basis of job attributes congruent with those identified by conventional class schemata?

(3) Are these types of classes consistent with other markers of class position? For example, do subjective interpretations of class match those derived from the analysis of job attributes?

(4) Are these patterns generic to industrial societies despite variations in historical experiences, or is the predominant picture one of national specificity?

One way to answer these questions is to adopt an inductive approach. With the minimum of *a priori* constraints it is possible to use data on individual job attributes to infer the existence of discrete latent social classes. To do this we can employ the technique of latent structure analysis. This allows us to quantify the correspondence between our inductively derived class categories and social classes identified through the conventional procedure of using occupational titles and a deterministic allocation algorithm. In like manner we also examine the correspondence between the inductively derived classes and respondents' subjective class identity.

The next step of our analytical strategy is to take two rather different central European countries and compare the structure of class-related job attributes in these countries with an established benchmark, Britain, where there is a considerable body of evidence concerning the existence of job classes. Central Europe provides a particularly stringent test of the generalisability of class theory. The role of political and institutional factors in influencing class structures has been pointed to in previous comparative research (i.e. Wright 1985; Kalleberg 1988). If we can detect class structures similar to those observed in the West in a post-communist context, it is powerful evidence of the generally applicable nature of the model of class under consideration.

The specific variant of class theory we shall examine is that associated with the writings of Goldthorpe and his colleagues (Erikson and Goldthorpe 1992; Goldthorpe and Heath 1992). We focus upon this particular conceptualisation of class for the following reasons: first, because it is widely employed in comparative research, particularly in the area of stratification and social mobility (Erikson, Goldthorpe, and Portocarrero 1979; Erikson and Goldthorpe 1992; Ganzeboom et al. 1989, 1992; Marshall et al. 1997); secondly, there is an articulated theory underlying the measurement of the class concept (Erikson and Goldthorpe 1992:36–42; Goldthorpe 1997) and evidence to suggest that, in Britain at least, it is measured effectively in these terms (Evans 1992, 1996a; Evans and Mills 1998a); and finally, because it is relevant to understanding a variety of phenomena of interest to sociologists (for reviews, see Goldthorpe and Marshall 1992; Goldthorpe 1996; Evans forthcoming).

There are, of course, other conceptions of social class which have some currency. Classes can be distinguished in terms of criteria other than those suggested by Goldthorpe and his colleagues, such as level of income or even cultural attributes (Bourdieu 1984), but with the exception of Wright's neo-marxist theory (1997) such conceptions are rarely accompanied by precise specifications of what their appropriate indicators should be and how precisely class positions should be mapped by them. Therefore, though they may be theoretically stimulating, their empirical characteristics are less easily identified and evaluated.

The paper proceeds by first defining the theoretically relevant characteristics of the Goldthorpe model of class structure. We then consider the implications of the central European context for our empirical analysis, paying particular attention to the legacy of communism and the transitional nature of post-communist states, before proceeding to describe the data, measures, methods and findings.

Job Attributes and the Goldthorpe Class Schema

Erikson and Goldthorpe define their class schema in the following way: 'The aim of the schema is to differentiate positions within labour markets and production units . . . in terms of the employment relations that they entail' (1992:37). The notion of employment relations is represented in the first instance by the distinction between employers, the self-employed, and employees, but within the category of employees the key distinction is 'between employees involved in a service relationship with their employer and those whose employment relationships are essentially regulated by a labour contract' (Erikson and Goldthorpe 1992:41–2). This labour contract entails: 'a relatively short-term and specific exchange of money for effort. Employees supply more-or-less discrete amounts of labour, under the supervision of the employer or of the employer's agents, in return for wages that are calculated on a "piece" or time basis' (pp. 41–2); whereas service relationships (pp. 41–2):

> involve a longer-term and generally more diffuse exchange. Employees render service to their employing organisation in return for 'compensation' which takes the form not only of reward for work done, through a salary and various perquisites, but also comprises important prospective elements – for example, salary increments on an established scale, assurances of security both in employment and, through pensions rights, after retirement, and, above all, well-defined career opportunities.

Thus the organising principle of the Goldthorpe schema is the nature of the employment relationship, the key feature of which is the way in which work is exchanged for rewards. Service occupations entail higher levels of trust on the part of employers, whereas working-class occupations are more likely to have closely regulated work and payment arrangements.[2] The mechanism of control

by which loyalty is obtained from service-class employees is via the notion of advancement and perks – in particular, unless employees carry out their tasks adequately, they are unlikely to receive the long-term benefits of career advancement that characterise service-class employment. In contrast, working-class employees receive payment for work done over a shorter time-span and are closely supervised to make sure that they carry out that work.

Following from this definition, Evans (1992, 1996a) identified three dimensions of job attributes that bear upon the issue of its validity: employment conditions; promotion prospects; and job autonomy (see also Evans and Mills 1998b). Of these, the first two are clearly central to the conceptualisation underlying the Goldthorpe schema. In addition, as different employment relations imply different degrees of employee control over the day-to-day conduct of work activities, job autonomy is also considered to be closely linked with positions in the schema (see Goldthorpe 1987:39; Marshall *et al.* 1988) and to account for some of the observed effects of class position on individuals' psychological well-being and life-chances (see, for example, Kohn and Schooler's (1983) study of the consequences of autonomy at work).

Assessing the Existence of Classes in Post-Communist Societies

The major question facing class analysis with respect to contemporary post-communist Europe is whether or not class is likely to become a progressively more important social cleavage as the ex-communist countries – with their former ideology of classlessness – attempt the hazardous process of transition to market-based economies. On the one hand, this process portends the accentuation of class differentiation associated with the workings of the market place. On the other, commentators from diverse sociological and political perspectives have advanced a variety of explanations why class divisions in post-communist states should be either muted, or at least different in type from those which have emerged in the West.

There are three principal views about the structure of social stratification in communist and post-communist societies.

(1) Many discussions of stratification under communism have focused on the *absence* of social cleavages. Communist societies were often described as being 'atomised' by the combination of repressive and highly centralised state activities and by a reward system which facilitated individual rather than collective action (Kornhauser 1960). In addition, the operation of egalitarian economic policies and the relatively low degree of correlation between traditional stratification indicators – such as property, education, status, occupation and wealth – were considered to inhibit the formation of social classes, and led to the emergence instead of social amorphousness and

homogenisation or of distinctive strata that did not cohere to form classes differentiated by multiple and correlated inequalities (Ossowski 1963; Wesolowski 1966/77; Connor 1988; Bendix 1969). An additional line of argument stressed the absence of the institutions of civil society, which was said to inhibit the formation of social identities from which social and political interests and allegiances might develop. In the economy, severe restrictions on the market – including the labour market – and on the private use of property and private property itself, prevented the formation of intermediate structures between citizen and state, such as corporations and trade unions. Institutions responsible for managing the economy were chiefly large-scale strategic and operational agencies of the state – state planning commissions and branch ministries – which operated highly redistributive policies and allowed enterprises to operate on the basis of soft budget constraints, thus limiting the development of competing interests derived from market position.

(2) A second view argues that social structures in communist states were not in fact homogenised, but instead took forms that were distinctly different from those in the West (see, for example, the class theories reviewed in Kolosi 1988). A not untypical sociological representation of stratification under Communism is provided by Hamilton and Hirszowicz (1993:236):

> A discussion of inequality and class under Communism poses a serious theoretical problem. None of the many class theories developed with reference to capitalist societies can be applied to Communist systems based on new social divisions and new forms of social inequality . . . in communist societies in Eastern Europe inequalities associated with the capitalist economy largely disappeared while new ones related to state socialism emerged.[3]

We thus have a picture of communist societies characterised by limited income differentials, a high degree of proletarianisation (see, for example, Beskid and Kolosi 1987; Mateju 1993), and forms of class division specific to communism (Konrad and Szelenyi 1979; Kende and Strmiska 1987; Gardawski 1996).

(3) The third model of social structure in post-communist states focuses on the impact of modernisation, which is considered to affect social structural development in a way which is independent of communist ideology and nation-state specific political and economic institutions. These convergence theorists assert that industrial society engenders similarities in occupational and status structures regardless of political regime. Modernisation creates pressures for institutional frameworks similar to those found in Western societies (chiefly private property, markets and political pluralism (Kerr 1983; Hoffman and Laird 1982).

Instead of homogenisation and alienation, therefore, modernisation theory predicts well-developed occupational and other divisions (see Evans and Whitefield 1993). Consistent with this argument, empirical research on social mobility in central Europe provides robust evidence of class differences in mobility patterns similar to those found in Western societies (see, for example, Kolosi 1988, and the studies referred to by Erikson and Goldthorpe 1992) and evidence of similar, though not identical, patterns of employment conditions (Kohn and Slomcynski 1990; Kalleberg and Stark 1993).

Each of these accounts has implications for the post-communist situation. The 'mass society thesis' implies that class divisions are neither well formed nor well articulated. Examples of this view can be found in Lipset's recent re-assessment of his influential work on the social bases of democracy (Lipset 1994), in analyses of the role of civil society in Eastern Europe by area specialists (i.e. Lewis 1993; Schopflin 1993), and in the writings of *marxisant* analysts such as David Ost (1993, 1995). Ost, for example, argues on the basis of the Polish case that in post-communist states 'Class sensibility remains weak because of the structure of Communism . . . the historical legacy of anti-Communism . . . and the policies of post-communist govern-ments' (1995:182). The 'class-divided but different' model also finds its protagonists. For commentators such as Hamilton and Hirszowicz: 'The communist legacy is still very noticeably there, not only as a living memory of the past but as deeply entrenched economic and institutional structures which have survived the disbanding of the communist parties and the rise of new political regimes' (1993:217). In contrast, modernisation and convergence theorists predict that similar patterns of divisions of the West pre-existed transition, although the differential possession of transferable resources with which to exploit the opportunities for advancement provided by the new system suggests that differentials between groups should increase (Kitschelt 1992).

Thus different theoretical perspectives on classes under communism sug-gest different conclusions about the nature of class in contemporary post-communist Europe. As we do not have over-time data, we cannot say much about the degree to which individuals or groups have converted their resources held under the communist system into advantages in the post-communist system. But we can see if present day class structures are in some sense distinctively post-communist rather than reflecting patterns of employ-ment relations more generic to industrial economies and by extension to those found in the West.

The two central European countries that we focus on, Poland and Hungary, share certain characteristics but differ markedly in others. Along with the Czech Republic, where Vaclav Klaus's economic reforms have been arguably the most successful of any former communist state (Orenstein 1995), these

countries have been at the forefront of the post-communist transition. For both of these economies, however, the years after 1988 saw increasing unemployment, a decline in real wages, a greatly expanded budget and a foreign trade deficit. These gloomy statistics were accompanied by others: massive inflation, declining gross domestic product and declining industrial output, although these had bottomed out by 1992.[4] Nevertheless, there are some significant differences both in their experiences under communism and in the economic policies adopted since 1989. In particular, Poland led the way into the free market for counties in central and Eastern Europe when Balcerowicz's 'shock therapy' plan was introduced on 1 January 1990. It also differs with respect to occupational structure in that its agricultural sector is clearly distinctive both in size and in organisation. Compared with Hungary, Poland has a large number of self-employed agricultural workers (Kolankiewicz and Lewis 1988). Most other central European countries do not have this feature and since 1989 the size of the agricultural sector in many of them has become even smaller than before the transition (Timar 1995). Hungary in turn, differs from other countries in central Europe in that a market was well-established prior to 1989 as a result of ten years of economic reforms that had already altered its distributive system (Kolosi 1988).

Data

For the central European analysis we use data on job attributes and class position collected in surveys conducted in Poland and Hungary in 1993–94. These surveys are national probability samples. All interviews were conducted face-to-face in respondents' homes by experienced interviewers. Survey quality was checked by means of a follow-up study of 10 per cent of the respondents to the initial survey who were randomly selected and re-interviewed a few weeks later. The cross-national comparability of the questionnaires was facilitated through an extensive process of translation and back-translation.

   The Hungarian survey was a probability sample of the adult population drawn in early 1994 from the Central Register of Population (1992). The survey was conducted in collaboration with Peter Robert and Matild Sag of the Tarsadalomkutatasi Informatikai Tarsulas (TARKI) in Budapest, who directed the fieldwork. Respondents were aged 20 and over. The sample involved selection of (1) twelve counties representing regions; (2) seventy-eight sampling points; (3) random selection of individuals. Names issued: 1,703; non-contact: 200; refusal: 189; achieved: 1,314. The response rate is 77 per cent of the initial sample and 87 per cent of those contacted. In terms of sex, urban–rural location, educational level and age the achieved sample closely matched figures reported in the Hungarian Population Census of 1990.

The Polish survey was conducted in the late summer of 1993. The sample of adults aged 18 and over was taken from the Central Register of Individuals. The sample was taken from eight regions with four levels of settlement stratification. The survey was directed by Marek Ziolkowski of the Institute of Sociology at the Adam Miskiewicz University at Poznan. Interviews were achieved with 1,729 (85 per cent) of the 2,040 names issued.

The British data are taken from the Social Class in Modern Britain Survey conducted in 1984 by Marshall and his colleagues. The sampling frame for the survey was taken from the British Electoral Register. The achieved sample was of 1,770 respondents between the ages of 18 and 64 for men and 18 and 59 for women which represents 62.5 per cent of the eligible sample. For further details, see Marshall *et al.* (1988:288–304).

The analyses that we report below make use of the following data: in Poland and Hungary, males and females in the labour market (employed and self-employed) working more than 30 hours per week. In Great Britain, owing to the fact that job attribute questions were only answered by employees, we are forced to restrict the sample to full-time employees aged 20–64 working for more than 30 hours per week.

The job attribute items used in the central European surveys were intended to be identical or at least equivalent across countries and to replicate as near as possible items used in British studies of job characteristics. Several replicate precisely those used in Marshall *et al.*'s British survey (Marshall *et al.* 1988); others were modelled on items in that survey but were modified to make them more appropriate for use in Eastern Europe. All items were pilot-tested prior to their use in the main surveys.

The wording and response categories of the six job attributes items are as follows:

Job on career ladder. Thinking about getting promotion or going up a career ladder, is your present job a step in a recognised career or promotion ladder within your organisation? [yes, no]

Main method of payment. In which of the following ways do you receive payments in your present job? Share of the profits; hourly wage; monthly salary; performance-related (e.g. piece-work, commission). And in which way do you receive the largest proportion of your pay?[5]

(*Paid overtime?*) Are you paid for any over-time work? [yes, no]

(*Who decides arrival time?*) Can you decide, either officially or unofficially, the time you arrive and leave work? [yes, no][6]

(*Who decides tasks?*) Do you decide the specific tasks or jobs you carry out from day-to-day or does someone else decide? [self, other person]

(*Who decides amount?*) Do you decide how much work you do during the day or does someone else decide? [yes, no].

The measurement of occupational social class in Poland was undertaken

using the algorithm developed by Goldthorpe and Heath (1992), with British OPCS occupational unit groups augmented by local information so as to take into account the greater range of agricultural occupations. In Hungary, the International Standard Classification of Occupation (ISCO) 1988 codes were used. An aggregation of five Goldthorpe classes is distinguished, which was largely determined by considerations of cross-national comparability. This leads us to merge class VIIb – agricultural labourers – with class IVc – farmers – on the grounds that institutional differences between the nations in the organisation of the agricultural sector during the communist years, in effect the mix of collective, co-operative and private farming, makes the coding of occupations to one or other of these classes unreliable. Similar reasons apply (following Erikson and Goldthorpe 1992:41) to the merging of class V (technicians and supervisors of manual workers) and VI (skilled manual workers) where the distinction is both difficult to code reliably and possibly of variable cross-national salience.

The resulting categorisation is as follows:

I/II	Service (salariat)
IIIab	Routine non-manual
IVab	Self-employed/small-scale employers
V/VI/VIIab	Manual supervisors and technicians/Skilled/semi-skilled/ unskilled manual workers
IVcd/VIIb	Farmers and farm labourers.

Respondents' class identification was measured using an indicator developed specifically for use in Eastern Europe: '*Here are a list of social groups in* [*country*] *today. To which of these groups* [*manager; entrepreneur; intelligentsia; manual worker; peasant; none of these*] *do you feel you belong?* This list of social categories presented to respondents was selected on the basis of pilot studies and local informants' knowledge. Almost 90 per cent placed themselves in one of these social classes without need for further prompting (see Evans 1996b).

Methods

The principal method of data analysis used in this paper is latent structure analysis. The basic idea is long established and very simple (Lazarsfeld 1950a, 1950b; Lazarsfeld and Henry 1968). In this section we present a brief and informal account of the method; a more detailed explanation, pitched at an introductory level, is given in McCutcheon and Mills (1998).

Latent structure analysis can be thought of as a form of factor analysis for categorical data. The essential idea is to 'explain' the associations between a set of categorical variables in terms of a hypothesised unobserved latent

typology. The observed variables are regarded as 'indicators' of this un-observed typology. Just as in factor analysis (for those not familiar with factor analysis Lewis-Beck (1994) provides a good introduction) we assume a model in which the indicator variables are uncorrelated with each other (condition-ally independent) given the 'scores' on the unobserved latent variable. In our case this means that a set of categorical variables are accounted for by a small number of latent types, the number of types being less than the number of indicator variables. The latent types are themselves categories, but they are not directly observable from the data and are inferred from the analysis. Conditional on membership of the inferred latent categories, the indicator variables are not associated with each other. Another way to understand this is to think of the common situation in the analysis of correlational data, where the correlation between two variables is the consequence of the common dependence of each on a third variable. In the next paragraph we represent the underlying model more formally for those interested in the technical details.

Consider a crosstabulation of three variables. In the standard notation the probability of being in a given cell of a crosstabulation of three observed variables, A, B and C with I, $\mathcal{J}$, K levels and one latent typology, X with T latent classes is represented as follows:

$$\pi_{ijkt}^{ABCX} = \pi_t^X \; \pi_{it}^{\overline{A}X} \pi_{jt}^{\overline{B}X} \; \pi_{kt}^{\overline{C}X}$$

This says that the probability of being in cell $ijkt$ of the cross-tabulation of the three observed variables with the latent unobserved variable is the product of the probability of being at level t of X and the three conditional probabilities (denoted by a bar over the variable) of being at levels i, j, k of A, B and C respectively given membership of latent class t. This model follows naturally from the assumption of conditional independence (though this assumption can be relaxed and its reasonableness tested (Hagenaars 1990)). In factor analysis interpretation of the latent dimensions is based on the factor loadings: in latent structure analysis interpretation is based on the conditional probabilities (the probability of a respondent taking a particular value on an indicator variable given their membership of a particular latent class). A successful application of the technique will suggest a latent typology of response patterns (Hagenaars and Halman 1989). In other words, we should be able to interpret the meaning of the latent categories in terms of the estimated conditional probabilities. The latent structure model can be estim-ated by application of the EM algorithm (Dempster, Laird and Rubin 1977). We use the LEM program (Vermunt 1997) to estimate the model parameters.

The analysis proceeds in the following way. Firstly, we select theoretically appropriate indicator variables. Then we assume a successively larger number of latent classes that will account for the association between the indicator variables. The smallest number of latent classes that can normally be assumed

is two. After estimating the parameters of a model with two latent classes we can examine various standard indices of fit. These tell us whether or not the assumption of just two latent classes is consistent with the actually observed data. The fit statistics that are normally used are those that will be familiar to users of other methods of categorical data analysis (such as log-linear models) namely the Pearson Chi Square statistic and the Likelihood Ratio Chi Square. If a model with two classes does not fit the data, then the number of assumed latent classes may be increased and the fit of the model again evaluated. The fit statistics can only be a guide to model evaluation. The selection of a final model or set of models to interpret must take account not only of formal model fitting criteria but also various substantive considerations, such as whether the model has a meaningful interpretation.

Results

In Table 1 we present the percentaged item responses in each nation for the six items used in the latent structure analysis. In addition the table includes the percentage distribution by Goldthorpe class and by subjective class identity. The latter is only available in a comparable form for the two central European countries.

Examination of Table 1 reveals a certain amount of cross-national variation that can plausibly be taken to reflect institutional differences in working conditions between the two central European nations. Comparisons across the columns of Table 1 reveal some differences in item responses across the three cases. However, cross-national differences in responses to single items are not our primary concern. What interests us is the composition of the latent groups that we assume produce the manifest response patterns in each nation.

Table 2 presents the fit statistics for simple latent structure models with between zero and four latent classes (H1–H4) fitted separately to the data from each nation. H1 assumes that all six indicators are independent of each other and subsequent models increase the number of latent classes within which conditional independence is maintained. Models H5 and H6 extend the 'measurement models' by adding Goldthorpe class (H5) and class identification (H6) respectively to the best fitting model from the set H1–H4. Models H5 and H6 maintain the conditional independence structure between all manifest variables and allow the examination of the association between the latent class typology and Goldthorpe class/subjective class grouping.

Considering Models H1–H4 we find that a three-class solution gives an acceptable fit in Great Britain and Poland while a four-class solution is necessary in Hungary. Table 3 presents the latent class probabilities and the item probabilities conditional on class membership for the three countries. The conditional probabilities must, of course, sum to one so we only give one figure for binary manifest variables. In comparing the British case with

<div align="center">

Table 1

Item Percentages by Country

</div>

		GB	Hungary	Poland
Who decides task?				
Self		47	34	49
Other		53	66	51
Who decides amount of work?				
Self		69	41	61
Other		31	59	39
Who decides arrival time?				
Self		32	26	33
Other		68	74	67
Is overtime paid?				
Yes		65	45	27
No		35	55	73
Job on career ladder?				
Yes		51	29	37
No		49	71	63
Main way paid				
Hourly rate		28	21	18
Monthly		69	57	53
Other		3	23	29
Goldthorpe class				
I/II	Salariat	34	26	24
IIIab	Routine non-manual	20	26	14
IVab	Self-emloyed		7	7
V/VI/VIIa	Manual	46	37	42
IVcd/VIIb	Farmers		4	13
Class identity				
Manual			56	50
Entrepreneur			10	4
Intelligentsia/manager/other			33	36
Peasants			1	11
Range of n		762–924	566–606	578–624

Hungary and Poland it is important to bear in mind that the British data excludes the self-employed whereas they are included in the central European data sets. This should lead us to expect some differences in the structure of the solutions and especially in the relative sizes of the latent classes.

Examining the conditional probabilities in Table 3, we find that in Britain and Hungary latent classes 1 and 2 pick out respondents whose pattern of job attributes indicates service class and more intermediate class employment

Table 2
Fit Statistics for Latent Class Models

	G^2	p	X^2	p	df
GB (n=793)					
H1	615.3	0.000	885.7	0.000	88
H2	123.9	0.001	116.4	0.005	80
H3	82.2	0.193	73.3	0.435	72
H4	61.2	0.577	58.7	0.663	64
H5 (n=788)	244.9	0.711	265.6	0.359	258
Hungary (n=550)					
H1	713.0	0.000	1361.4	0.000	88
H2	150.2	0.000	142.0	0.000	80
H3	96.8	0.027	93.8	0.043	72(+1)
H4	64.2	0.470	60.4	0.604	64(+3)
H5 (n=539)	294.9	1.000	546.6	0.000	432(+1)
H6 (n=524)	202.3	1.000	336.3	0.546	340(+3)
Poland (n=564)					
H1	695.6	0.000	1125.7	0.000	88
H2	164.1	0.000	157.5	0.000	80(+1)
H3	77.8	0.298	74.6	0.393	72(+1)
H4	57.6	0.702	51.1	0.878	64(+1)
H5 (n=537)	356.4	0.999	435.7	0.602	444(+2)
H6 (n=563)	265.6	0.999	510.4	0.000	351(+3)

relations. In Poland these types are merged together. In all three nations we find one group that displays characteristics that correspond to what are, in the terms of Goldthorpe's class theory, wage-labour contract conditions of employment. In Britain and Hungary this is latent class 3 and in Poland class 2. Finally in the two central European nations we find a final latent class (4 in Hungary, 3 in Poland) that appears to be some sort of relatively autonomous entrepreneurial or farming group.

In one sense, this pattern of results clearly suggests the following identities for the latent classes. In all three nations it clearly distinguishes a manual working class and a white-collar salariat. In the two central European nations, which include self-employed respondents, it also distinguishes an entrepreneurial group. Where we find some cross-national variability is in the composition of the intermediate group, which is discriminated effectively in Britain and Hungary, but not in Poland. This is to be expected as it is in these groups that we are most likely to find the effects of idiosyncratic cross-national institutional differences in working arrangements which will inevitably have an impact on the latent class solution. In Poland the size of the self-employed agricultural sector is such as to render other distinctions less salient. There is a degree of cross-national variation in the conditional probabilities that define these groups. For example, in Britain members of latent class 2, the inter-

Table 3
Class Probabilities and Item Conditional Probabilities

	GB			Hungary				Poland		
	1	2	3	1	2	3	4	1	2	3
Class probabilities										
Conditional probabilities										
Who decides task?										
Self	0.86	0.42	0.02	0.66	0.00	0.03	0.86	0.79	0.15	0.98
Who decides amount of work?										
Self	0.94	0.80	0.24	0.74	0.00	0.14	1.00	1.00	0.27	1.00
Who decides arrival time?										
Self	0.57	0.20	0.11	0.11	0.09	0.00	1.00	0.33	0.06	0.96
Is overtime paid?										
Yes	0.32	0.97	0.76	0.39	0.44	0.68	0.23	0.28	0.35	0.10
Job on career ladder?										
Yes	0.70	0.42	0.32	0.42	0.18	0.16	0.49	0.56	0.33	0.25
Main way paid										
Hourly	0.05	0.48	0.40	0.06	0.07	0.70	0.02	0.09	0.30	0.01
Monthly	0.94	0.48	0.57	0.91	0.89	0.00	0.55	0.85	0.60	0.14
Other	0.01	0.04	0.03	0.02	0.04	0.30	0.43	0.06	0.10	0.85

mediate group, seem to experience quite a large amount of autonomy over deciding how much work they do. However, in Hungary this group has no autonomy whatsoever. Likewise we see that while in Britain and Hungary the payment of overtime rates is discriminated by class types, in Poland it is scarcely discriminated at all. One interpretation of this would be that state-specific institutional differences in the way work is organised can affect what it means to be a white-collar worker or a manual worker.

But what Goldthorpe class categories do these service class type and labour contract latent classes correspond to? This can be seen in Table 4 which is derived from model H5. It displays the estimated two-way marginal distribution of latent class type by Goldthorpe class that is obtained by summing over all indicator variable margins. This collapsing of the table allows us to examine the extent of the mapping of latent classes onto the categories of the class schema.

<div align="center">

Table 4

Estimated Latent Crosstabulation of Latent Class by Goldthorpe Class

(Percentages)

</div>

	I/II	IIIab	IVab	V/VI/VIIa	IVcd/VIIb
Great Britain					
1	71	20		9	
	81	*35*		*7*	
2	31	52		18	
	17	*44*		*6*	
3	1	9		90	
	2	*20*		*87*	
Hungary					
1	68	18	1	11	2
	69	*19*	*5*	*7*	*14*
2	16	57	1	23	3
	18	*66*	*2*	*17*	*26*
3	5	9	2	80	4
	7	*13*	*9*	*74*	*44*
4	19	6	60	8	6
	7	*2*	*84*	*2*	*16*
Poland					
1	58	24	1	13	4
	64	*42*	*6*	*9*	*8*
2	12	13	1	69	5
	26	*48*	*6*	*90*	*22*
3	13	8	29	3	46
	10	*10*	*88*	*2*	*70*

Note: Row percentages are shown in normal type face and column percentages for each country are shown in italic.

In Table 4 we find that in Britain latent class 1 and 3 seem to map quite neatly onto Goldthorpe class I/II and V/VI/VIIa respectively. In Hungary we find a somewhat similar degree of matching. In Poland the match is slightly less good (this time involving latent classes 1 and 2). In Britain latent class 2 maps onto Goldthorpe IIIab, but there is some overlap with Goldthorpe I/II; a pattern we find repeated in Hungary.

As we observed above, in both central European nations we find a latent class that does not appear in Britain because of differences in the range of occupations covered by the dataset. In Hungary latent class 4 maps onto Goldthorpe IVab. In Poland the equivalent latent class 3 maps onto Goldthorpe

Table 5

Estimated Latent Crosstabulation of Latent Class by Class Identification (Percentages)

	Class identification			
Latent class	Manual	Entrepreneur	Intelligentsia	Peasant
Hungary				
1	23	2	76	0
	9	*4*	*52*	*0*
2	27	4	68	1
	10	*10*	*41*	*34*
3	95	2	3	1
	77	*8*	*4*	*66*
4	18	70	12	0
	3	*78*	*4*	*0*
Poland				
1	12	0	88	0
	7	*0*	*68*	*0*
2	83	1	15	1
	86	*14*	*21*	*5*
3	17	15	21	47
	7	*85*	*11*	*95*

Note: Row percentages are shown in normal type face and column percentages for each country are shown in italic.

IVab and IVcd/VIIb, reflecting the greater proportions of independent smallholders in the Polish sample.

In Table 5 we extend the analysis to include class self-placement in the two central European nations. Here we again find a broadly consistent pattern, in which latent classes 1 and 2 in Hungary, and latent class 1 in Poland closely match with the self-label 'intelligentsia', while latent classes 3 and 2, respectively, are self-defined as manual working class, and latent classes 4 and 3 map onto the category of 'entrepreneurs'. Where Hungarians and Poles differ is in the link between self-classifying as a 'peasant' and mapping onto the entrepreneurial latent class. Again, this occurs because Poles are far more likely to be independent smallholders and far more of them are self-described as peasants. In more collectivised Hungary, there is little evidence of such a group.

From this analysis we can discern the following patterns of difference in the structures revealed in the three countries: some differences in the profiles of job characteristics in the latent class solutions; some differences in the

mappings of latent classes onto observed occupationally-based classes; and some evidence of differences in latent structure deriving not from an East–West difference but from the presence or otherwise of a large, peasant-based agricultural sector. In terms of the basic patterns of class structure, however, the three measures of class position – latent, Goldthorpe schema and self-placement – converge in their findings cross-nationally.

Conclusions

Our introductory remarks made clear the requirements that class theories face if they are to attain a relatively basic level of validity: classes should be observable in the terms specified by class theory across different economic and political contexts. Inevitably, the identification of classes from among the multitude of occupations using only six relatively crude measures of complex theoretical concepts is fraught with difficulty. Moreover, it is to be expected that the concept of class is going to be less effectively operationalised in Eastern European countries than it is in Britain. Not only is the class schema itself constructed in the West, so are the items developed to assess key aspects of employment relations. Terminology and distinctions derived from British employment practices are unlikely to translate perfectly into a situation in which the characteristics of occupations are likely to reflect, among other things, both former communist reward principles and embryonic capitalist development. None the less, the insights to be gained from an analysis using even imperfect measures make their use worthwhile. After all, the main consequence of weaknesses in our measures is that divisions between classes, whether operationalised by occupational schemata or indicators of job characteristics are likely to be underestimated compared with those which would be obtained with measures developed specifically for the former-communist context. Refinements in the ways that class is operationalised in Eastern Europe or in the way that job characteristics are elicited are thus likely to further strengthen arguments concerning the generalisability of class distinctions across economic systems.

It should also be remembered that central Europe is in a state of flux. Moves from communism to market systems are under way, with somewhat different strategies being employed to, on the one hand, develop a competitive economy and, on the other, preserve some aspects of social provision, with which to both ameliorate the social consequences of marketisation and help mute popular opposition to the transition. Even in the two former-communist societies examined here, there have been diverging trajectories and in terms of both the extent of political regulation and economic organisation (especially of the agricultural sector) different starting points. If classes can be detected with any clarity in these countries it is rather powerful evidence of the generality of the concept of class investigated in our analysis.

Given these qualifications, how successful has latent structure analysis been in identifying general patterns of class structure in these three European societies? We have seen that the marginal distributions of the variables presented in the analyses above vary somewhat cross-nationally. In part this is to be expected – in Poland, for example, we would expect to find a far bigger independent agricultural sector than elsewhere, and we do. In part, however, the explanations of these variations must be apportioned between as yet unspecified institutional influences on the *sizes* of classes in these countries and the vicissitudes of survey research using different sampling frames and different 'house styles'. Despite this however, there is a reasonable degree of cross-national similarity in the *structure* of job characteristics and in the patterns of association within countries between job characteristics and occupational class position. Again, sizes of latent classes vary across countries, but their content seems to be relatively generalised. Compared with the British data there is less definition in the central European surveys in both the patterning of job attributes and their relation to positions in the Goldthorpe class schema but, as we have pointed out, there are good reasons to expect this to be the case even if the 'true' patterns of association in central Europe were as clearly defined as they are in the British data.

The links between the latent classes and subjective interpretations of class position are also sensibly interpretable. This not only adds some convergent evidence to that obtained using latent structure analysis to identify classes, but it suggests also that the concept of social class is meaningful to our central European respondents. Their self-location in a classificatory scheme is both readily obtainable and also has considerable overlap with the class schema developed by Goldthorpe as well as with the latent classes identified in our analysis.

Our findings do, however, point to one significant limitation of Goldthorpe's class theory for identifying meaningful class divisions in post-communist societies. This concerns the analysis of the class position of self-employed agricultural workers in the two central European countries: although farmers and self-employed/small businessmen are given different class positions in the Goldthorpe schema, the items used in our latent class analysis clearly do not distinguish between them. This is perhaps not surprising, because there are no obvious reasons why farmers should be distinguished from other petty bourgeois on the basis of *class* characteristics. The division between farmers and self-employed/small businessmen, although employed extensively in comparative analyses using the Goldthorpe schema, appears more consistent with ideas of situs and sectoral distinctions than of class, at least as defined by Goldthorpe. The fact that classes IVabc are not employees of course allows the possibility that they are differentiated by aspects of class situation other than those identified in our or Evans's earlier (1992, 1996a) analyses of employees job characteristics, but these characteristics need more explicit elaboration than they have yet received. As it stands, the basic division

between employers, self-employed and employees, with yet further distinctions among the latter, does not provide a theoretical basis for distinguishing farmers – i.e. peasants – from entrepreneurs. Given the markedly different situations of these groups in Eastern Europe (see Evans 1996b), this would appear to be an undesirable limitation of the conceptual framework underlying Goldthorpe's schema.

In conclusion, in all three nations our latent structure analysis clearly distinguishes a manual working class and a white-collar salariat. In the two central European countries it also distinguishes an entrepreneurial group which though very similar in terms of our indicators of class-related working conditions turn out to have a rather different social and situs composition in each country. Where we find more cross-national variability is in the composition of the intermediate groups. This, however, is only to be expected as it is in these groups that we are most likely to find the effects of idiosyncratic cross-national institutional differences in working arrangements which will inevitably have an impact on the latent class solution. There are, therefore, reasonable grounds for claiming that classes as clusters of theoretically defined attributes exist in at least two former-communist societies in much the same way as they do in Britain.

This conclusion is consistent with evidence indicating that in contemporary Eastern Europe class position allocated on the basis of occupational titles is a marker for a wide range of inequalities of resources and conditions. These inequalities reflect the fates experienced – and expected – by members of different social classes during the process of transition (see Mateju 1993; Kolosi and Rona-Tas 1992; Timar 1995; Winiecki 1994; Kramer 1995). Members of the salariat and entrepreneurial classes, for example, are not only more likely to report increases in living standards since the end of communism, but expect these to continue. In contrast, 'peasants' and the working class predominantly report a decline in their economic situation; they are more hopeful about the future, but still less confident than members of the other classes (Evans 1996b). Similar patterns occur for perceptions of promotion prospects – thus adding subjective evidence to the data on career ladders presented in this paper – and the working class are also more likely to report having 'no way at all' of improving the standard of living of their family in the future. Unsurprisingly in the context of such experiences, class divisions over the goal and method of transition to a market economy have emerged and are likely to have some influence on the nature of political competition in the region (Evans 1995, 1996b). Indeed, given the polarisation in the economic situation and corresponding subjective experiences of different classes evident in Eastern Europe, it could be argued that we might even expect to see *stronger* class bases to politics than in the West. This is not to deny that there have been diverse experiences during the economic transition even within classes – workers in heavy industry, for example, have fared worse than those in the service sector (see Kramer 1995) – but as the decaying

sectors of East European economies are the main source of working-class employment, the process of re-structuring hits these classes hardest and the possession of transferable resources under the new system is probably greatest among managerial, highly educated and entrepreneurial classes (Kitschelt 1992), the likely outcome is for class divisions to accentuate over time.

Acknowledgements

Notes

1. We take the term 'class situation' from Weber, although of course it has been used by many others (see, for example, Scott, 1994).
2. Although it is perhaps more accurate to point out that the service contract is precisely designed to *minimise* reliance on trust by structuring rewards in prospective and diffuse ways: see Goldthorpe (1997).
3. Hamilton and Hirszowicz (1993:219) elaborate these points: 'the ranking of the institutions and enterprises in which people were employed in many cases differentiated their incomes and life-chances much more than formal qualifications: miners were better off than university teachers and rank and file employees of the party apparatus received better perks and benefits than highly qualified medical staff in hospitals or research workers in the state-sponsored institutes.'
4. Detailed information on the economic progress of Hungary and Poland in the post-communist era can be obtained from Winiecki (1994).
5. The equivalent item in Britain has a slightly different format: 'Which of the ways on this card best describes how you are paid in your present job? [hourly paid, performance, piece-work, basic plus commission/productivity, basic only, other]. As many of these response categories had only a few cases in them they were recoded to hourly paid+payment by results+other; basic plus commission/productivity; basic only.
6. This item was preferred to the one more commonly used to measure payment conditions in Britain – 'are you required to clock on or sign yourself in and off work?' – as preliminary observations suggested the latter might not translate effectively into the East European context.

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