CHAPTER FOUR

Does the Sociological Approach to Studying Social Mobility Have a Future?

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The analysis of social mobility tables has become one of the signature contributions of sociology over the last half-century. If sociology can count this tradition as one of its resounding successes, it is in part because a consensus over methods has allowed mobility analysts to turn to research rather than squabble endlessly over how it should be completed. Although the discipline is justifiably proud of this success, it is nonetheless useful to ask whether the long-standing methodological conventions within the subfield continue to serve the mobility analyst well. The time is ripe for such a reexamination because the latest wave of cross-national mobility research has all but come to a close (e.g., Erikson and Goldthorpe 1992; cf. Breen 2005a) and because new theoretical developments in economics allow us to reconsider our conventional methodological commitments in light of the strikingly different rationale for mobility research that economists typically offer. In this chapter, we expose some of the assumptions of sociological mobility research, ask whether they still can be defended, and outline in the process a new program of mobility research that sociologists and economists alike could embrace.

We concentrate, in particular, on the usefulness of applying conventional social class schemes to characterize the positions between which individuals can move. Within sociology, the mobility analyst typically proceeds by classifying parents and children in terms of "big-class" schemes that

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comprise, for example, such categories as professionals, managers, routine nonmanuals, petty bourgeoisie, and skilled and unskilled manual workers (e.g., Goldthorpe 2000). The study of mobility then reduces to the study of transitions between cells in the matrices formed by cross-classifying the big-class categories of parents and children. As new statistical techniques have emerged, the resulting mobility array has been analyzed with increasingly sophisticated models, but the array itself has been constructed in much the same way for the last half-century.

We don't mean to suggest that all methodological debate has been eliminated within this subfield. For example, we have ourselves criticized the big-class convention in earlier essays (e.g., Grusky and Weeden 2001; Sørensen and Grusky 1996), but our critique has not so much challenged the class concept itself as the way it has been operationalized. That is, we have suggested that mobility analysis should be carried out with micro classes (i.e., detailed occupational categories) rather than big classes, because the former are more deeply institutionalized than the latter and provide, as a result, an important conduit through which human and social capital is transmitted (e.g., Grusky and Weeden 2001; Rytina 2000). We review this argument below, contrast it with more fundamental critiques of the class concept itself, and discuss how these various challenges of conventional mobility analysis might be evaluated empirically.

Within the discipline of economics, the study of mobility has not been equally prominent, at least not until a wave of mobility research was triggered by the increase in inequality in the 1980s and 1990s and the consequent interest in testing for an offsetting increase in mobility between economic categories (e.g., Gottschalk 2001; also see Bowles et al. 2005; Corak 2005). This motivation accounts in part for the characteristic focus among economists on economic rather than class mobility (cf. Kambourov and Manovskii 2004). Although the study of mobility within economics has been methodologically more diverse than its counterpart tradition in sociology, most economists proceed either by modeling the tabular arrays formed by discretizing the income (or earnings) distributions of parents and children or by analyzing correlations between continuous income (or earnings) measures for parents and children.

This focus on economic mobility becomes less defensible as multidimensionalist accounts of inequality grow increasingly popular within economics (e.g., Sen forthcoming). Indeed, just as big-class models have recently

come under some criticism within sociology, so too has the measurement paradigm that underlies economic mobility research. These criticisms within economics have most frequently drawn on the argument that income-based measurement fails to "take cognizance of other aspects of the quality of life that are not well correlated with economic advantage" (Nussbaum forthcoming:4; also Bourguignon forthcoming). By implication, the conventional practice of focusing exclusively on economic mobility is no longer defensible, and multidimensional strategies for analyzing inequality, poverty, and mobility come to the fore (esp. Sen forthcoming). This reaction against the income paradigm has also taken the form of increasing sensitivity to the "lumpiness" of labor markets. By "lumpiness," we mean that income-based measures and arbitrary discretizations of those measures fail to capture the social organization of inequality, including the emergence of social networks, norms, and "adaptive preferences" (i.e., tastes, culture) within various social groupings (see Grusky and Kanbur forthcoming). We consider below whether such concerns might be usefully addressed with a new approach to studying mobility.

These developments in sociology and economics argue for a more comprehensive reevaluation of how mobility should be analyzed. We take on this task here by proposing a simple mobility model that is responsive to many of the concerns that have emerged in both disciplines. After introducing this model, we use it to show that sociologists have approached the study of mobility under the spell of three assumptions: (1) that the multidimensional space of inequality resolves into social classes, (2) that inequality is transmitted between generations via social classes, and (3) that these classes are small in number and big in size. To date, these assumptions have either gone unrecognized or been treated as a matter of faith, a state of affairs that we seek to rectify here. We show that these three assumptions can be examined empirically by taking advantage of new methodological developments in latent class analysis.

MULTIDIMENSIONALISM AND SOCIAL CLASS

It is useful to begin by reviewing the multidimensionalist critique because we draw so heavily on it in devising a new mobility model. As noted above, this critique levels two challenges at the income paradigm: first, that income does not exhaustively describe the quality of life; and, second, that it fails to

capture the social organization of inequality as expressed in the tendency for groups at the "site of production" to develop distinctive cultures and adaptive tastes (e.g., Sen 1997). The latter criticism has not yet motivated new measurement strategies, but the former underlies the development of various scales that take into account noneconomic sources of inequality. The best-known "multidimensional" measure, the Human Development Index (HDI), is now closely monitored throughout the world, although it has been widely criticized as simplistic and under-theorized (e.g., Kanbur 2001) and hence has spurred much revisionist work.

Could multidimensional scales like HDI provide a useful foundation for a new round of mobility studies? We are skeptical for two reasons. First, any attempt to reduce the multidimensional space of inequality to a single scale, whether HDI, socioeconomic status, or some other index, can be misleading insofar as the underlying dimensions are only poorly correlated with one another. When these correlations are weak, much information is lost by replacing scores on each dimension with an aggregate score. The second reason for skepticism is that HDI, socioeconomic scales, and related indices are unresponsive to the "social organizational" critique of conventional measurement approaches. These scales are all highly abstract characterizations of inequality that smooth over the social groups within which norms, networks, and adaptive preferences emerge (Grusky and Kanbur forthcoming). For example, socioeconomic scales group together all occupations that have similar pay levels and educational requirements, even though these occupations may have quite distinct cultures and only rarely interact with one another.

How, then, should mobility analysts respond to the rise of multidimensionalism? We argue below that the multidimensionalist critique provides an unprecedented, and as yet unexploited, opening for sociological models of class. Indeed, multidimensionalism may breathe new life into the class-based mobility table, thereby quelling the growing tendency among sociologists to challenge class-based approaches (e.g., Pakulski 2005). In theory, class models can make multidimensional space tractable by characterizing it in terms of a relatively small number of classes, each comprising a distinctive combination of endowments (e.g., education, human capital), working conditions (e.g., level of authority, autonomy), and job rewards (e.g., income, wealth).

We are thus suggesting that classes should be understood as a set of institutionalized "solutions" in multidimensional space around which

individual-level variability is relatively limited. The class of craft workers, for example, has historically comprised individuals with moderate educational investments (i.e., secondary school credentials), considerable occupation-specific investments in human capital (i.e., vocational training, on-the-job training), average income, relatively high job security, middling social honor and prestige, quite limited authority and autonomy, and comparatively good health outcomes (by virtue of union-sponsored health benefits and regulation of working conditions). By contrast, the underclass is characterized by a very different package of endowments, conditions, and rewards that combines minimal educational investments (i.e., secondary school dropouts), limited opportunities for on-the-job training, intermittent labor force participation, low income, virtually no opportunities for authority or autonomy on the job (during the characteristically brief bouts of employment), relatively poor health (by virtue of lifestyle choices and inadequate health care), and social denigration and exclusion. Similarly, other classes may be understood as particular combinations of scores on the fundamental endowments, working conditions, and job rewards of interest. The long-standing presumption, of course, is that social classes cannot be reduced to a unidimensional scale because the constituent endowments and rewards do not necessarily vary together, an inconvenience that makes it inadvisable to resort to socioeconomic scales or income-based measures of social standing (e.g., Jencks et al. 1988).

In short, class analysts presume that the space of rewards and capabilities has relatively low dimensionality, indeed a dimensionality no more nor less than the number of postulated classes. This assumption is a simplifying one because the social classes institutionalized in the labor market are presumed to represent only a small subset of the logically possible "packages" of endowments, working conditions, and rewards. If class models of this kind are on the mark, the task of reducing a potentially complicated multidimensional space to some manageable number of dimensions is solved institutionally and does not require any complex econometric machinations.

The obvious irony here is that economists have been searching for a measurement strategy that captures the multidimensional lumpiness of labor markets while sociologists have long been sitting on a solution (i.e., social class) without fully recognizing the problem (i.e., multidimensionality) to which it may be the answer. The great potential of class-based approaches has indeed gone largely unrecognized by sociologists. Even though the distinctive

advantage of class categories is that they signal a complex of life conditions that are bound together in a package (i.e., a "lifestyle"), the typical sociologist will attempt to motivate a class categorization by singling out a particular variable (e.g., authority, employment relations) as analytically crucial and then claiming or demonstrating that the preferred categorization captures it. For example, Goldthorpe (2000) argues that the form of regulation of employment (e.g., salaried, short-term contract) is the analytically crucial variable, and he then demonstrates that the categories of the Erikson-Goldthorpe (EG) scheme differ in their characteristic forms of regulation (also see Evans 1992; Evans and Mills 1998; Rose and O'Reilly 1997, 1998).

This unidimensional approach to motivating class models fails to appreciate that their main selling point is their intrinsically synthetic character. If sociologists truly believe that a single variable, such as the "form of regulation of employment," is the fundamental source of interests and life chances, then they ought to measure that variable directly rather than operationalize it indirectly through conventional classes. The logic of current research practice among sociologists therefore eludes us. It is rather like an economist claiming that income is the master variable of interest, but then opting to measure income indirectly and imperfectly through a social class scheme. There is no good reason to resort to a proxy that is more costly and difficult to measure than the variable for which it is a proxy.

If the usual sociological motivation for class analysis is unconvincing, is there some alternative rationale that salvages the practice? We think so. Namely, we suspect that sociologists have been instinctively drawn to class schemes because they provide a synthetic measure of "life conditions" that broadly define the quality of our social lives, including the endowments we control, the organizational conditions under which we work, and the economic (e.g., wages) and noneconomic (e.g., health) implications of these endowments and organizational conditions. In textbook descriptions of class categories, a common rhetorical device is to contrast a "day in the life" of incumbents of different classes, precisely because the implications of class are presumed to be manifold and reliably revealed throughout the day in various ways (e.g., Kerbo 2002; Rossides 1990). Class schemes appear, then, to solve each of the two problems identified by multidimensionalist economists. The potential complexity of multidimensional space is resolved by resorting to prepackaged "bundles" of structural conditions, and the social organization that emerges within this space is captured by measuring

institutionalized groupings rather than resorting to purely nominal statistical constructions.

To this point, our suggestion that class categories are prepackaged bundles of this sort is a mere assertion; and we of course do not advocate that analysts take the assertion on faith alone. Rather, one can examine empirically (1) whether the multidimensional space of inequality is indeed reducible to a relatively small number of characteristic combinations of endowments, working conditions, and job rewards, and (2) whether these prepackaged solutions are indeed rooted in the division of labor and thus correspond either to big classes or micro classes. As we noted above, some scholars (e.g., Evans 1992) have sought to validate their preferred class map against a few variables of interest, but such tests do not provide the comprehensive assessment that an omnibus measure of life conditions demands.

The first step in carrying out a more comprehensive test is to develop a list of life conditions that, taken together, adequately characterize the multidimensional space of inequality. The task of defining the variables of interest has itself generated much debate, not just among sociologists (e.g., Bourdieu 1984), but also more recently among economists and philosophers (e.g., Nussbaum forthcoming). If these literatures are compared, one nonetheless finds considerable agreement on the following three classes of variables: (1) *investments and endowments* refer to formal schooling, vocational schooling, literacy, occupation-specific experience, firm-specific experience, total experience, and IQ; (2) *working conditions* refer to the type of employment contract (e.g., salary, wage), unionization, labor market type (e.g., firm size), authority, autonomy, and substantive complexity; and (3) *job rewards* refer to income, health status, and wealth.[1] To be sure, this list omits some important variables that are not available in large-scale surveys, but it is surely comprehensive enough to shift the burden of proof to those skeptics who believe that adding more variables would lead to fundamental changes in the underlying multidimensional structure of inequality.

A MULTIDIMENSIONAL MODEL OF MOBILITY

With this understanding of the multidimensional space, the assumptions underlying conventional mobility research can then be represented with a latent class model that (1) characterizes the structure and dimensionality of inequality among parents as well as their offspring, and (2) allows for

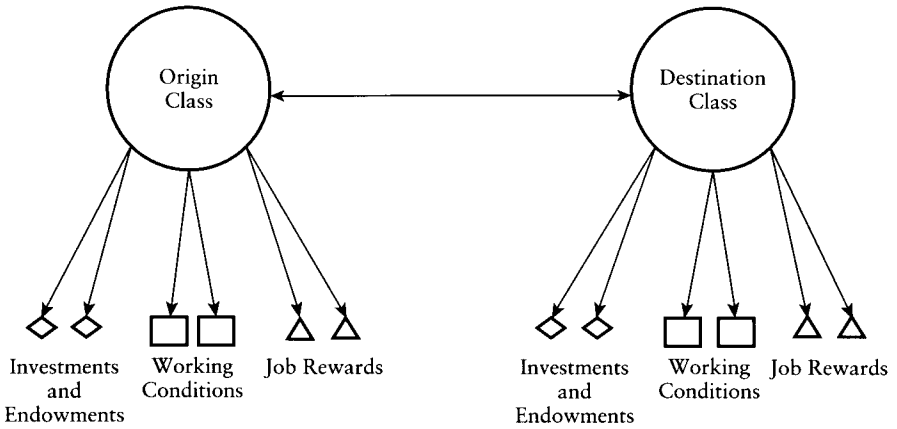


Figure 4.1. Latent Class Model of Mobility

intergenerational reproduction in the context of this characterization. We offer our model principally as a heuristic that reveals the assumptions of conventional mobility research.[2] With a sufficiently large sample, a model of this type could be estimated, but we leave that task for the (perhaps distant) future.

This heuristic model, which is diagrammed in Figure 4.1, has three components: a measurement model specifying the structure of origin classes, a measurement model specifying the structure of destination classes, and a mobility model specifying the relationship between origin and destination classes. The measurement model in each generation represents classes as packages of investments and endowments, working conditions, and rewards. Although we have simplified the presentation by allowing only six indicators for the origin and destination models, an authentic multidimensional specification would require a far better representation of the inequality space.[3] It also bears noting that the class structure may take on a different form when operating as a "background condition" (i.e., class origins) and as a "contemporaneous condition" (i.e., class destinations). We could easily test the claim that the class structure assumes a consistent form in each of these two guises by imposing equality constraints on the respective conditional probabilities.[4]

The structural part of the model, which grafts together the two measurement models, could be assumed to take on log-linear form (see Marsden 1985 for a related model). Although origin and destination classes may prove

to be latent rather than manifest, the usual array of log-linear models can still be applied (e.g., Hagenaars 2002). The measurement model for each generation is more complicated because some of the indicators will be continuous and others will be categorical. For such mixed-mode data, the following measurement model might be estimated:

$$f(\mathbf{y}_i|\theta) = \sum_{k=1}^{K} \pi_k \prod_{j=1}^{J} f_k(y_{ij}|\theta_{jk}), \tag{1}$$

where y_i denotes the parent's or offspring's scores on the manifest variables, K is the number of latent classes, π_k refers to the probability of belonging to the k^{th} latent class (thus indexing latent class sizes), J denotes the total number of manifest variables, and j is a particular manifest variable. This equation states that the distribution of y_i, given the model parameters of θ (i.e., $f(y_i|\theta)$), is a mixture of class-specific densities (i.e., $f_k(y_{ij}|\theta_{jk})$).

We must also specify the appropriate univariate distribution for each element y_{ij} of y_i. The natural choice for continuous y_{ij} is the univariate normal, whereas the natural choice for discrete nominal or ordinal variables is the (restricted) multinomial. We assume that the manifest variables are independent within latent classes and that all of the observed association between manifest variables is therefore attributable to the particular patterning of latent class membership. That is, we don't assume that all class members have identical scores on the manifest variables, but we do assume that, whenever a class member has a score that deviates from the class profile, this deviation doesn't convey any information on the likelihood of deviating on any of the other variables. The assumption of local independence can be relaxed, but we insist on it because it captures a main constraint embodied in the class hypothesis.[5]

The resulting model, which we appreciate is ambitious, can be estimated because of three statistical advances: the recent development of latent class models for data that include continuous and categorical indicators (e.g., Vermunt and Magidson 2002), the development of increasingly sophisticated latent class models that fuse structural and measurement models (e.g., Hagenaars 2002), and new programming enhancements that make it possible to estimate models with more parameters than was before feasible (see Hagenaars and McCutcheon 2002, Appendix C). This approach is tractable, in particular, because models for mixed-mode data obviate the need to discretize continuous variables and thus allow them to be treated parsimoniously, an

absolute necessity given the number of variables that multidimensionalists will likely wish to bring into the analysis.

We will not discuss issues of modeling or estimation in any further detail here. As we stressed above, our objective for this chapter is not to estimate a model of this sort, although doing so is, as we see it, a high priority for mobility researchers. For the purposes of this chapter, we wish merely to use the model to expose the assumptions of conventional mobility analysis, a task we begin in the next section.

ASSUMPTION #1: THE INEQUALITY SPACE RESOLVES INTO CLASSES

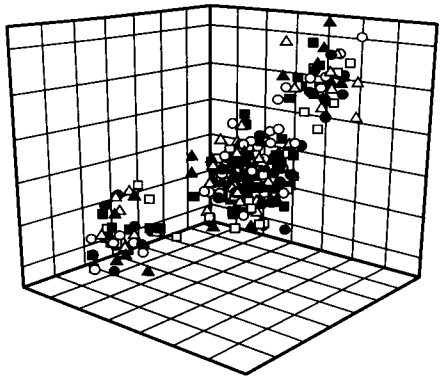
The claim that inequality takes on a "class form" (e.g., Wright 1997) is one of the few distinctively sociological contributions to inequality measurement. For all its popularity, the class concept nonetheless remains a largely metaphysical commitment, a conventional approach to constructing the mobility table that sociologists reflexively adopt with little substantiating evidence. With few exceptions, the discipline appears to have been quite satisfied to accept the class concept on faith alone, defending it either by referring to its long provenance in both the theoretical and empirical literatures or by rehearsing long-standing claims that social classes represent the underlying variables (e.g., authority, ownership) that define interests or life chances.[6] In recent years, a small contingent of postmodernists have begun to criticize class-based approaches (e.g., Pakulski 2005; also, Kingston 2000), yet these critics have for the most part simply asserted that class models are predicated on problematic assumptions; and such assertions are no more or less convincing than the equally unsubstantiated presumption in favor of the class concept. This impasse is, as we will show, altogether unnecessary, because the class model rests on assumptions that are testable.

It is useful to represent the class assumption graphically. In the graphs that follow, big-class membership will be signified by three symbols (i.e., square, triangle, circle), while micro-class membership within each big class will be signified by different shadings of these symbols (i.e., light, dark). That is, we are coveying the big-class hypothesis with the claim that the inequality space can be adequately represented with just three classes (e.g., nonmanual, manual, farm), while we are conveying the micro-class hypothesis with the claim that each of these big classes must be further divided into two

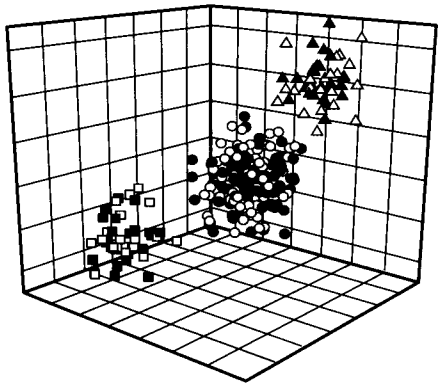
subclasses. Also, we are assuming in all our graphs that the inequality space comprises only three individual-level variables (e.g., education, type of employment contract, income), a simplification that allows us to depict the various class and nonclass hypotheses in three-dimensional space. The resulting figures are clearly gross simplifications. If our model were to be estimated with real data, the inequality space would perforce be represented with many more variables, and the class schemes with which we would attempt to characterize that space would be the standard ones in the literature, such as the 7-category Erikson-Goldthorpe scheme (Erikson and Goldthorpe 1992) or the 126-category Weeden-Grusky scheme (Weeden and Grusky 2005). We have simplified here merely to make the presentation tractable.

In considering the measurement portion of our latent class model (see Equation 1), the key question is whether the multidimensional space of inequality resolves into classes of some kind, each characterized by a different constellation of scores on the underlying individual-level variables. We have depicted several ideal-typical solutions in Figure 4.2. Although class-based solutions may take on either a big- or micro-class form (see Assumption #3 below), the solution shown in Figure 4.2a is of course consistent with a big-class model. As shown here, the individual-level variables do not covary within each of the big classes, implying that there is no residual intra-class clustering into micro classes. The big classes of Figure 4.2a are termed "disorganized" because they do not overlap with functional groupings at the site of production (e.g., manual, nonmanual, farm). That is, incumbents of each latent class are diversely drawn from different positions in the division of labor, a solution that is inconsistent with the long-standing sociological presumption that inequality is generated at the site of production.

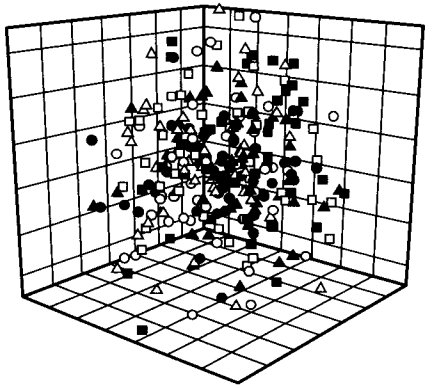
The class structure of Figure 4.2b takes on a more familiar sociological cast. Whereas the big classes of Figure 4.2a are formed outside the site of production and are therefore "postmodern" in composition (Hall 2001), the classes depicted in Figure 4.2b are rooted in the division of labor. Although most class analysts have simply assumed that classes are "sociological" in this way, one could instead test this assumption by forcing latent classes to be perfectly defined by big-class membership (thus making them manifest). The contrast between an unconstrained latent class model (Figure 4.2a) and a corresponding constrained model (Figure 4.2b) speaks to the extent of sociological organization in the class structure.



(a) Disorganized Big Classes



(b) Organized Big Classes



(c) Non-Class Solution

Figure 4.2. Big-Class and Non-Class Solutions of a Hypothetical Inequality Space

It is also possible that the inequality space will not resolve into classes of any kind. The one-class solution of Figure 4.2c, which is an extreme case of disorganization, represents an inequality regime in which there is no "crystallization" at all (see Landecker 1981). Under this specification, there is substantial inequality (as revealed by the variances on each of the univariate distributions), but it takes a peculiarly structureless form in which the independence assumption holds throughout multidimensional space, not just within a given latent class. Again, it is unlikely that such extreme disorganization will ever be realized, but the ideal type does represent a form of inequality that some postmodernists (e.g., Pakulski and Waters 2001) argue is emerging.

The measurement model in Figure 4.1 could of course take on many other forms. For now, there is no need to attempt any exhaustive accounting of the possibilities, because our point here is simply that the "class form" is a testable characterization of the inequality space. Although there is overwhelming evidence that the extent of inequality is increasing worldwide, we simply do not know whether equally revolutionary changes in the form and structure of inequality are also occurring. Is inequality increasingly taking on a class form? Or are social classes disappearing even as income inequality is increasing? Are particular social classes, such as the underclass, becoming more coherent even as other classes begin to fade? Is the class structure changing in similar ways in more developed (MDCs) and less developed countries (LDCs)? Are classes emerging in LDCs but disappearing elsewhere? These types of questions can only be answered by developing a multidimensionalist monitoring system that moves beyond simplistic measurements of the extent of inequality and additionally describes the form that such inequality takes.

ASSUMPTION #2: INEQUALITY IS TRANSMITTED THROUGH CLASSES

If an empirical case for class-based mobility analysis is to be made, it should be forged not only on the claim that classes provide a parsimonious account of the multidimensional space of inequality, but also on the claim that they have effects on life chances that are not reducible to the effects of endowments, working conditions, and job rewards. This second claim can be addressed by focusing on the transmission of inequality as represented by the structural component of our latent class model.

Although contemporary mobility analysts continue to routinely use class models, it seems that they increasingly do so out of tradition and habit rather than any strong conviction that inequality is truly transmitted through classes. This loss of faith in the class realist position is perhaps most striking in the work of Goldthorpe (2002, 2000) and Breen (2005b). For some time, Goldthorpe and Breen have sought to refashion class analysis on rational action foundations, yet their efforts have had the perverse and unintended effect of undermining all but a purely nominalist rationale for class analysis. The key assumption of rational action theorists is that classes are merely bundles of conditions and constraints that become the context within which decisions about human capital investments are made. In explaining, for example, the tendency for working class children to "underinvest" in schooling, Goldthorpe (2002, 2000) emphasizes that such decisions merely reflect the precarious economic situation within which such children are operating. This argument goes further than the standard claim that working class children cannot afford tuition, cannot forego wages while attending school, or cannot readily borrow money to finance an investment in schooling (because capital markets are imperfectly developed). Worse yet, whenever a working class experiment with higher education fails (i.e., working class children drop out), there are inadequate reserves to finance a fallback investment in vocational education or to otherwise salvage the situation and avoid downward mobility.

This line of reasoning implies that working class "underinvestments" in schooling are not underinvestments at all, but rather rational responses to the tenuous financial position of working class children. The important point for our purposes is that, under this rational action formulation, the real determinant of investment decisions (and hence outcomes) is wealth, not class. The class variable is accordingly reduced to nothing more than a proxy for wealth.

Obviously, wealth is unlikely to be the only variable that shapes investment decisions, but the nominalist critique of class analysis applies as long as there is a set of underlying variables (i.e., endowments, working conditions, and rewards) that define interests and determine decisions. These variables, whatever they may be, serve to "carry" the effects of class and hence obviate the need for a class concept. If this reductionist hypothesis is on the mark, it follows that the model of Figure 4.1 will not fit because some of the underlying variables, such as wealth, will have *direct* effects on outcomes.

Although such reductionist arguments are ubiquitous, they have not yet been tested with a plausibly comprehensive model that fits all the underlying variables in terms of which classes are defined (but see Halaby and Weakliem 1993).

It is also possible, however, that the model of Figure 4.1 will reveal that the class concept has merit. Why might net effects of class be detected even with rigorous controls for the underlying variables? There are two relevant arguments in this regard. First, insofar as classes are indeed organic "packages" of conditions, then the constituents of these packages may combine and interact in ways that lead to an *emergent* logic of the situation. The underclass, for instance, may be understood as a combination of negative conditions (e.g., intermittent labor force participation, limited education, poor health, low income) that, taken together, engender a sense of futility, despondency, or learned helplessness that is more profound than what would be expected from a model that simply allows for independent effects of each constituent class condition. Granted, a committed reductionist might counter that one need only include the appropriate set of interactions between the constituent variables, but insofar as classes define the interactions of interest (i.e., the relevant packages of interacting conditions) this approach becomes an unduly complicated way of sidestepping the reality of classes.

The second argument for a net class effect rests on the additional claim that such class-defined packages of conditions are associated with distinctive class cultures that take on a life of their own and thus independently shape behavior and attitudes. It is always possible that such class cultures are merely "rules of thumb" that encode best-practice behavioral responses to the working conditions that classes entail. These rules allow class members to forego optimizing calculations themselves and rely instead on cultural prescriptions that provide reliable and economical shortcuts to best practices (e.g., Goldthorpe 2000). At the same time, other theorists (e.g., Wilson forthcoming) allow for class cultures that are truly maladaptive, such as a "culture of poverty" that filters information in unduly cynical ways and that engenders an excessive sense of futility and despondency. In either case, classes will have net effects on aspirations and on decisions about human capital investments (especially schooling), effects that are not reducible to those of the individual-level variables in the measurement model.

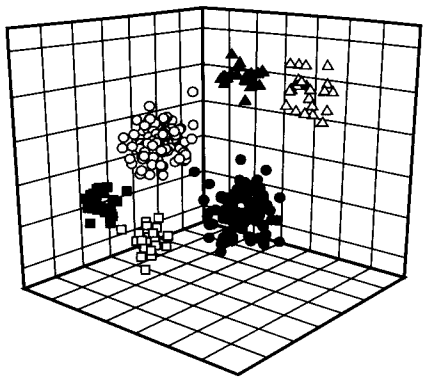
We cannot, then, make a convincing realist case for classes without estimating models that include rigorous controls for endowments and

investments, working conditions, and job rewards. If we find that classes have no net effects in the presence of such controls, we can conclude that the class concept is superfluous and that the variables constituting the inequality space should be used in quantitative modeling. This does not imply that a net class effect, were it to be found, would give license to the conventional sociological practice of using class alone as a measure of social origins. Rather, if the data reveal that both class and reductive measures have net effects, a hybrid model of inequality would be indicated. We can only defend an exclusively class-based approach if the underlying class indicators either have no effects or have such limited effects that conventional class schemes become a cost effective, albeit imperfect, approach to representing the transmission process.

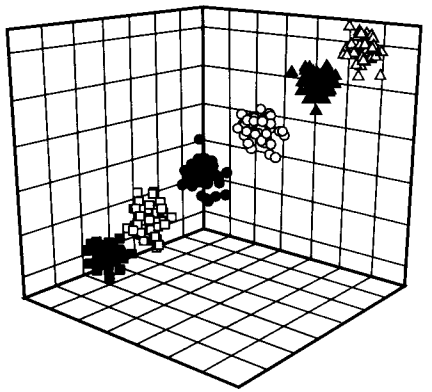
ASSUMPTION #3: CLASSES ARE BIG

The third and final pillar on which conventional mobility research rests is the assumption that intergenerational reproduction occurs at the big-class level. That is, mobility scholars not only routinely assume that inequality is transmitted via classes (i.e., Assumption #2), but also that these classes are adequately described by Erikson-Goldthorpe categories or some other big-class scheme formed by aggregating detailed occupations or jobs (i.e., assumption #3). This preference for big classes rests on the assumption that (1) endowments, working conditions, and rewards come together to form a small number of coherent "packages," and that (2) intergenerational reproduction plays out identically for all members of each of these big class packages. The former assumption pertains to the measurement model of Figure 4.1, whereas the latter assumption pertains to the structural model of Figure 4.1. We will review each in turn.

We can again resort to graphs to depict the conditions under which our measurement model corresponds to a big- or micro-class account. In Figure 4.3a, for example, the individual-level variables are no longer independent of one another within each big class, thus implying that further subdivision into micro classes is necessary. Although these micro classes are assumed here to be "organized" (i.e., formed at the site of production), we could also represent the case of disorganized micro classes, an ideal type that would contradict the conventional sociological model both in terms of size of the classes and their composition.



(a) Organized Micro-Classes



(b) Gradational Micro-Classes

Figure 4.3. Micro-class Solutions of a Hypothetical Inequality Space

We can further distinguish between gradational and non-gradational variants of the micro-class solution (compare Figures 4.3a and 4.3b). In prior research, scholars have chosen between these two accounts on the basis of taste or "theory," and two parallel streams of research have therefore emerged. By contrast, our model makes it clear that the choice is best understood as an empirical choice, with the relevant test resting on the fit of a model that scales the latent classes or, less restrictively, imposes ordinality constraints on them (see Rost 1988; Croon 2002). We can also test whether this estimated scale (for the latent classes) is socioeconomic in structure. The socioeconomic index is merely a particular type of class model that (1) treats all occupations with the same socioeconomic score as a "micro

class," and (2) presumes that such socioeconomic scores adequately index inequality along a host of dimensions, not just income and education. These various unidimensionalist solutions therefore provide precisely the simple index that economists have long sought in the context of multidimensional space. However, rather than simply imposing an arbitrary unidimensional solution on the data, a latent class approach lets us test existing scales, develop an alternative unconstrained scaling that may better account for the multidimensional structure of the data, and determine whether any scaling of the latent classes, even one that is freely estimated, can adequately characterize the structure of multidimensional space (see Hout and Hauser 1992).

We can likewise advance a micro-class hypothesis for the structural part of our latent class model. To be sure, the decline of farming has brought about a physical separation of home and workplace in most families, presumably making it more difficult for parents to provide specialized on-the-job training for their children. The separation of home and workplace underlies the emergence of reproduction theories (e.g., Bourdieu 1984) that focus on the intergenerational transmission of diffuse big-class capital (social, cultural, and human) rather than specialized micro-class capital. Although there is undoubtedly merit in such big-class theories, we suspect that the pendulum has swung too far in favor of them and that parents transmit not only generalized capital but also more specialized forms that generate substantial reproduction at the micro-class level (see Jonsson et al. 2005; Grusky and Weeden 2002; Sørensen and Grusky 1996).

These pockets of micro-class reproduction persist because many parents are deeply involved in their occupations and thus bring home much in the way of specialized human, social, and cultural capital. We are referring here to parents who work at home, who talk about their occupations at the dinner table and in other home settings, and who may even explicitly train their children in occupation-specific skills. For example, an actor may frequently practice lines at home, may bring her or his children to the set, and can provide instant access to specialized "Hollywood" networks. Likewise, professional baseball players provide ongoing expert instruction in the intricacies of hitting and fielding, deliver immediate "name recognition" in the fierce competition for access to the minor leagues and beyond, and transmit a taste for baseball as a vocation more profound than the usual childhood fantasies. At the bottom of the class structure, micro-level reproduction may emerge because parents can desensitize their children to tasks (e.g., embalming, plumbing) that outsiders would regard as unpleasant, unusual, or undesirable. The foregoing examples, which obviously are no more than suggestive, imply that much reproduction may occur at a more detailed level than has typically been appreciated.

In the context of our latent class model, the latter micro-class hypothesis can be tested by simultaneously fitting disaggregate and aggregate inheritance effects, where the former blank out the "thin" micro-diagonal and the latter blank out the "fat" macro-diagonal (corresponding to class inheritance in an aggregate array). By failing to fit the micro-diagonal, conventional analysts confound disaggregate and aggregate inheritance, thus upwardly biasing the effect of the latter and creating the impression of more aggregate closure than in fact there is. When a full model is estimated, we may find that micro-class reproduction is more pronounced than big-class reproduction, implying that decades of analysts have misunderstood where the rigidities in the mobility regime are principally found.

CONCLUSIONS

In sociology and economics alike, unidimensional approaches to representing inequality are increasingly unfashionable, with many economists questioning the long-standing "income paradigm" and many sociologists eschewing the equally venerable socioeconomic scale (e.g., Erikson and Goldthorpe 1992). Although there is, then, an emerging cross-disciplinary consensus on the importance of a multidimensional approach, this development has not yet affected how sociologists or economists study mobility.

We have elaborated a simple latent class model that can serve as a primitive framework for investigating the multidimensional structure of mobility. This model allows us to test for the class form by distinguishing between class-based, gradational, and disorganized forms of inequality and mobility. If a class form emerges, we can also determine how many classes are necessary to adequately characterize the space and whether those classes correspond to detailed occupations (i.e., the micro-class solution), aggregations of detailed occupations (i.e., the big-class solution), or more heterogeneous constellations of positions at the site of production (i.e., the "postmodern" solution). This framework could be used to characterize and compare the structure of mobility and inequality over time and across countries. We could use it to investigate whether the class principle is more developed in

some countries (e.g., Sweden) than in others (e.g., United States), to examine whether high-inequality regimes (e.g., Brazil) tend to be organized in class terms, or to ask whether the worldwide rise in inequality has been coupled with a corresponding resurgence in class-based inequality.

We have paid particular attention to the class concept because of its potential to represent multidimensional space parsimoniously in terms of institutionalized packages of endowments, working conditions, and rewards. Ironically, economists have well appreciated the challenges of characterizing multidimensional space but have not yet provided satisfying solutions to this challenge, whereas sociologists have long held a possible solution (i.e., the class model) but have not fully appreciated the problem that it may very well solve. If these two literatures are brought together, the class model becomes nothing more than a particular hypothesis about the structure of multidimensional space (and mobility therein), and the sociological tendency to blithely default to it cannot be justified. Likewise, gradational scales (e.g., HDI, SES) are defensible only to the extent that they are consistent with the structure of mobility and inequality, meaning that decisions to default to such measurement approaches must again be empirically justified.

If the sociological approach to mobility is to survive, it must therefore be converted from a mere disciplinary predilection to an approach with real empirical standing. As best we can tell, sociology is slowly losing its once-privileged position in mobility studies, as scholars in other disciplines, especially economics, routinely default to income-based representations of mobility (e.g., Bowles et al. 2005; Corak 2005). It is unlikely that sociological models of mobility will survive this incursion because economists suddenly decide to mimic the research practices of sociologists or to read the famous treatises on class provided by Marx, Weber, and their followers. Rather, a compelling *empirical* defense of the payoff to class-based mobility models is required, without which we can expect economists and other social scientists to continue to apply income-based models and thereby dismiss or ignore the sociological legacy.

There is, to be sure, no guarantee that class models will pass the empirical test. If they fail, sociologists had best face up to this result now and jettison that part of our intellectual history that is an empirical dead end. Although the concept has survived a half-century without an empirical test, it is both dishonest and imprudent to duck the question any longer.

Notes

1. Some scholars, especially economists, might consider health as an endowment or capability rather than a "reward" or consequence of class. For our purposes, it suffices that health is recognized as a constituent of class, and the particular category under which it is subsumed is inconsequential.

2. The model of Figure 4.1 represents the "destination class" as a cause of investments (e.g., schooling) that were often made in advance of entering the labor force. Unlike the conventional status attainment model, our latent class model should not, then, be construed as a meaningful structural model of the life course. It is merely a specification that formalizes and tests the hypothesis that intergenerational association assumes a class form.

3. The latent class model graphed here does not include measures of big- and micro-class membership and thus does not allow us to assess whether latent and manifest classes overlap. It is straightforward to include such measures as additional observed variables and then fit a confirmatory model resting on the constraint that each "latent" class corresponds perfectly with a manifest class (see "Assumption #1: The Inequality Space Resolves into Classes").

4. We are glossing over additional complications that arise because the measurement and structural parts of the model can also imply a different form to the class structure (see Winship and Mare 1983 for relevant formulations). For example, the effects of origins on destinations might take on a simple gradational form (see, e.g., Hout and Hauser 1992), whereas the inequality space itself might not.

5. The well-read scholar of mobility will appreciate the resemblance between the model in Figure 4.1 and the multidimensional structural equation model posited long ago by Hauser (1973). In proposing such a model, Hauser was not only remarkably prescient in advancing a multidimensional conception of inequality, but also in attempting to characterize it parsimoniously through the device of latent variables. The model proposed here differs from Hauser's model by virtue of (1) including a wider array of endowments, investments, working conditions, and rewards, and (2) characterizing the resulting multidimensional space with the device of (latent) classes rather than (latent) continuous variables.

6. To be sure, some scholars have sought to examine the empirical standing of the class concept (e.g., Evans and Mills 1998, 2000), but they have not understood the inequality space to be multidimensional and hence have fallen short of carrying out the full test that we envision here.

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CHAPTER FIVE

The Economic Basis of Social Class

John H. Goldthorpe and Abigail McKnight

This chapter starts out from a theory of social class that has been presented more fully elsewhere (Goldthorpe 2000: ch. 10). The theory was developed together with a class schema for use in empirical research that has by now become quite widely adopted, especially in social mobility research, and is variously known as the Goldthorpe, Erikson-Goldthorpe-Portocarero or CASMIN schema. The new British National Statistics Socio-Economic Classification (NS-SEC), introduced in 2001, represents a further instantiation of the schema (Rose and O'Reilly 1997, 1998; Rose and Pevalin 2003). Table 5.1 shows the correspondence that exists between the classes of the original schema and those of the NS-SEC in its seven-class "analytical" version.[1] Both classifications will be applied in the course of this chapter.

Under the theory in question, class positions are seen as deriving from social relations in economic life or, more specifically, from employment relations. It is, therefore, in economic life that the implications for individuals of the class positions that they hold should be most immediately apparent. The main purpose of the chapter is to show that this is indeed the case, so far at least as contemporary British society is concerned, and, in particular, in regard to (1) economic security, (2) economic stability, and (3) economic prospects.

In this way, empirical support can be provided for the theory itself and also further confirmation of the validity of the social classifications that are

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