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Chapter 2

Are There Social Classes? A Framework for Testing Sociology's Favorite Concept

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THE STUDY of inequality is plagued by a surplus of measurement paradigms based variously on socioeconomic or prestige scales, income or earnings reports, and Weberian, neo-Marxian, or Durkheimian class schemes. The chapters in this volume reveal quite strikingly this embarrassment of riches, with some contributors characterizing inequality in terms of aggregate occupational categories (Manza and Brooks, Lareau and Weininger), others treating income or education as more fundamental metrics (Lacy and Harris, McCall), and yet others focusing on the subjective classes with which individuals identify (Hout). Most often, scholars choose a measurement paradigm not on the basis of scientific criteria, but rather as a matter of faith or as a symbolic badge of affiliation with a discipline, subfield, or favored scholar (for a similar critique, see Bollen, Glanville, and Stecklov 2001, 163; Duncan et al. 2002; Hout and Hauser 1992). This affiliative effect accounts, for example, for the great regularity with which economists "decide" to analyze labor markets in terms of income or earnings, while sociologists "decide" to analyze much the same phenomena in terms of class or socioeconomic standing. Frequently, these decisions take place without much attention to the discarded alternatives, so much so that many economists treat the study of income inequality as synonymous with the study of inequality itself (see, for example, Sen 2006), just as many sociologists assume that the study of class inequality exhausts the study of inequality.

The purpose of this chapter is to develop a framework for subjecting such extra-empirical decisions to empirical test. Although our framework could be used to test a variety of measurement approaches, we concentrate here on assessing the viability of class models. This is an appropriate starting point because the class model has long dominated sociological models of life chances (Breen 2005), health, illness, and mortality (Robert and House 2000), political attitudes and outcomes (Svallfors 2006), lifestyles and consumption practices (Lareau 2003), and many other social behaviors (Weeden 2002). If socioeconomic and related scales reigned supreme in the 1960s and 1970s, it is the class scheme that has come to be dominant since the 1980s. The ubiquity of the class control within sociology led Paul DiMaggio (2001, 542) to conclude that measures of social class are modern day "crack troops in the war on unexplained variance."

The class concept remains, then, a core commitment within sociology, yet arguably its influence has been waning in recent years. It is not merely that postmodernists continue to argue that the class concept is rooted historically in the early industrial period and is less useful in understanding the structure of contemporary inequality (see, for example, Pakulski 2005). Additionally, standard class categories (such as professional, manager, clerical, craft) are gradually being displaced by measurements of income, earnings, or education in conventional quantitative analyses of social behavior. This movement away from class models has not, to our knowledge, been driven by new empirical results that have shown that class no longer captures the structure of inequality all that well (see Kingston 2000). If in the past sociologists defaulted to class models without much empirical foundation, now they are turning away from such models with just as little empirical justification.

It is striking how little interest there has been in adjudicating among competing measurement traditions. The decision to privilege one tradition over another is often treated as a matter of taste that hardly requires defense. In those relatively rare cases when measurement decisions are defended, the tendency is to resort to non-empirical criteria, such as tradition or theory, in waging that defense. The class and socioeconomic concepts, for example, are often defended by simply referring to their provenance in the literature or by rehearsing long-standing and untested claims that social classes or socioeconomic scales represent the underlying variables that define interests, life chances, or life conditions. To be sure, some scholars have examined empirically the relative merits of different types of occupational scales (Hauser and Warren 1997), while others have likewise offered putative tests of the class concept (see Evans and Mills 1998, 2000; Hout, Brooks, and Manza 1993; Halaby and Weakliem 1993; Evans 1992). These tests fall short, as we show here, of a convincing adjudication among competing measurement approaches.

The premise of our chapter is that discipline-specific preferences for particular measurement approaches, including the class concept, can and should

be converted from purely metaphysical commitments to testable claims about the structure of the inequality space and how it is changing. We develop a modeling framework that allows scholars to determine whether conventional measurements of income, socioeconomic status, or social class adequately characterize the multidimensional space of inequality. This framework also allows us to monitor trends in the extent to which inequality takes on a particular structural form; and to quantify the effects of inequality (once it is adequately characterized) on individual-level outcomes of interest such as attitudes or demographic outcomes. Although we hope ultimately to deploy this framework, here we merely describe it.

As will become clear, our goal is not to advance or promote any particular class model (such as Marxian, Weberian, or micro-class), but to develop methods that make it possible to subject class models of all kinds to convincing empirical test. We therefore reject the standard presumption, illustrated throughout the chapters of this volume, that measurement choices may be justified by simply proffering a definition that appears to motivate them. We instead accept at face value all the various and sundry definitions of class on offer and ask how such definitions might be evaluated. The conventional definition-based legitimation of measurement decisions should be replaced, we argue, with an empirical legitimation that requires analysts to demonstrate that their preferred measure in fact adequately captures the structure of inequality.

Two complementary analytic approaches form the centerpiece of our framework: a "pure" approach that makes no reference to the consequences of class, and an "effect-calibrated" approach that builds in such consequences quite explicitly. In the pure approach, the objective is to examine whether conventional measurement schemes (socioeconomic, class-based, income-based) can account for the multidimensional space of inequality, where the latter is defined by endowments (education, work experience), working conditions (authority, autonomy, form of employment contract), and rewards (income, wealth). The multidimensional models that we develop will allow scholars to distinguish between gradational, class-based, and disorganized forms of inequality. If a class form emerges, scholars can further determine how many classes are necessary to characterize the space adequately and whether those classes correspond to detailed occupations (the micro-class solution), aggregations of detailed occupations (the big-class solution), or more heterogeneous constellations of positions at the site of production (the "postmodern" solution).

This approach allows scholars to answer fundamental questions about trends in inequality. Is inequality increasingly taking on a class form? Are particular social classes (such as the professional-managerial class) becoming especially coherent and well formed? Is the middle class breaking down? Is a true working class or underclass developing in the late industrial context? Are the various inequality dimensions instead becoming less tightly

associated and more postmodern in form (see, for example, Pakulski 2005)? These questions entail a shift in focus from monitoring trends in the amount of inequality to monitoring trends in the shape and form of inequality. The latter trends are critical in understanding how inequality is experienced. If the well-known rise in income inequality has been coupled with a tightening of the association between income and other dimensions of inequality, it follows that the disadvantaged are doubly losing out, not just because they are ever more distant from the advantaged but also because they are increasingly likely to be disadvantaged in many overlapping ways (income, wealth, risk of unemployment).

In our effect-calibrated analyses, we ask whether gradational scales or class categories have true emergent effects on social behaviors, where “emergent effects” refers to those that cannot be reductively explained in terms of selection (the nonrandom recruitment of individuals into classes), the underlying job conditions that define classes (including the form of employment contract), or job rewards (including class-specific profiles of income). These analyses address whether particular types of class schemes perform especially well in explaining social outcomes (attitudes, political behavior, and lifestyles) and whether nonclass measurement approaches (income and SES) can outperform class models. We do not develop models that tease out the particular mechanisms through which such class effects might arise. The logically prior step, we argue, is to determine whether there are any effects to explain and hence any need to identify mechanisms behind them. Indeed, just as scholars of neighborhood effects led off by testing for contextual effects before turning to mechanisms (Sampson, Morenoff, and Gannon-Rowley 2002; Sobel 2003), so too class analysts should begin by testing for the simple existence of class effects. It is strange that such tests have to date been overlooked.

The first line of analysis thus represents the structure of inequality without taking into account its effects on dependent variables (“pure” operationalizations), whereas the second line of analysis develops representations that do take into account such effects (“effect-calibrated” operationalizations). We review each approach in turn.

Pure Operationalizations

Inevitably, all measurement models are predicated on *some* pre-empirical decisions, and good science is all about making those decisions as transparent as possible and locating them at such a primitive level that they are as uncontroversial as possible. By current convention, a scholar is obligated at most to justify his or her adoption of a particular type of class scheme (Weberian, Marxian, micro-class), a particular type of scale (Duncan SEI, prestige), or a particular type of earnings report (hourly wages, annual wages). There is no corresponding obligation to justify the decision to priv-

ilege one family of measurement approaches (such as social class) over another (such as earnings report).

How might we attempt such a justification? The first step, we argue, is to define the “inequality space” as a multivariate distribution of variables (income, wealth, authority) that index the structure of advantage and disadvantage. The task of specifying the underlying dimensions of advantage and disadvantage has generated much discussion among sociologists, economists, and philosophers (see Bourdieu 1984; Grusky and Ku 2008; Nussbaum 2006). These literatures reveal some amount of agreement on the importance of three families of variables: “investments and endowments” (I) refers to personality attributes, human capital, formal and vocational schooling, and all forms of experience; “working conditions” (C) refers to the type of employment contract (salary, wage, self-employed), union status, labor market type (formal, informal), and job authority, autonomy, and complexity; and “rewards” (R) refers to earnings, investment income, program income, and wealth. This list of variables omits some important dimensions but is comprehensive enough to shift the burden of proof to those skeptics who believe that adding yet more variables would lead to fundamental changes in the underlying structure of inequality.

The virtue of building our measurement approach in terms of the inequality space is not that doing so eliminates pre-empirical considerations. The foregoing list of dimensions defining our inequality space instead reflects and specifies our assumptions about what matters for life chances. By committing to a particular inequality space, these assumptions about the dimensions that govern life chances are directly revealed, and there is no longer any need to glean those assumptions indirectly from some operational commitment to a particular scale or class scheme.

The many available scales or class schemes can then be understood as different ways of simplifying the multidimensional space defined by these underlying dimensions. We may ask, for example, whether earnings reports, detailed occupations, or socioeconomic scales can represent adequately the structure of this multidimensional space. These models of inequality, now construed as hypotheses about the inequality space, can be tested with confirmatory latent-class models, as described later. The latent-class framework also allows us to assess whether individuals cluster into classes that combine dimensions in ways that are not well described by conventional class models.

This framework is viable because of three statistical advances in latent-class modeling: the development of models for mixed-mode data that combine continuous and categorical indicators (see, for example, Magidson and Vermunt 2002); the associated development of models that constrain the underlying classes to be scaled or ordered (see Croon 2002); and programming enhancements that make it possible to estimate models with many more parameters than was previously feasible (see Hagenaars and McCutcheon

2002, appendix C). The analyses that we propose are tractable because latent-class models for mixed-mode data obviate the need to discretize continuous variables and thus allow them to be treated parsimoniously.

We describe the latent-class approach in more technical terms later. The less technically inclined reader need merely appreciate that this approach allows us to assess whether conventional measurement models adequately characterize how individuals are distributed across the multidimensional inequality space.

Until relatively recently, latent-class models for continuous and categorical indicators developed along quite separate tracks, making it difficult to carry out analyses that combined the two scale types. However, these two tracks have now been joined (see Vermunt and Magidson 2002), with the resulting latent-class model for mixed-mode data represented as follows:

$$f(\mathbf{y}_i/\theta) = \sum_{k=1}^K \pi_k \prod_{j=1}^J f_k(y_{ij}/\theta_{jk}) \quad (2.1)$$

In this model, \mathbf{y}_i denotes the respondent's scores on the manifest variables (the variables defining the inequality space), K is the number of postulated latent classes, π_k refers to the probability of belonging to the k th latent class (thus indexing latent-class size), J denotes the total number of manifest variables, and j is a particular manifest variable. The distribution of \mathbf{y}_i is a function of the model parameters of θ , a function that takes the form of a mixture of class-specific densities ($f_k(y_{ij}/\theta_{jk})$). We must also specify the appropriate univariate distribution for each element y_{ij} of \mathbf{y}_i . For continuous y_{ij} , the natural choice is the univariate normal, whereas for discrete nominal or ordinal variables it is the (restricted) multinomial.

The manifest variables are assumed to be independent within latent classes. That is, we do not 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 mean, this deviation does not 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.

The utility of this approach may be illustrated by representing a simplified case in which the multidimensional space is defined by only three individual-level variables, such as income, education, and authority. We have further simplified our illustrative figures by representing just three big classes (aggregations of detailed occupations) and six micro classes (detailed occupations). We might postulate, for example, that the inequality space resolves into three classes: professionals and managers, routine nonmanual workers, and manual workers. The micro-class hypothesis might be represented by the competing claim that the professional-managerial class is best subdivided into separate professional and managerial classes, the routine

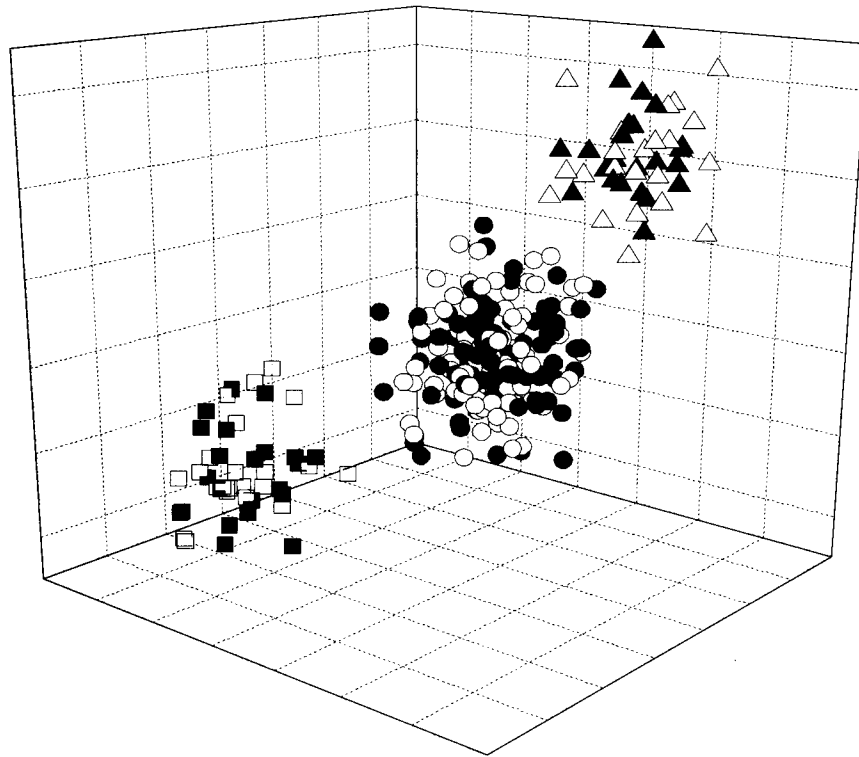
nonmanual class is best subdivided into separate sales and clerical classes, and the manual class is best subdivided into separate craft and operative classes. As it is usually understood, the micro-class approach implies far finer distinctions than the foregoing (see, for example, Weeden and Grusky 2005a, 2005b, 2006), but our simplified example illustrates the type of analysis that might be undertaken. In the figures that follow, big-class membership is signified by three symbols (square, triangle, circle), and micro-class membership within each big class is signified by shades of these symbols (light, dark).

This framework may be used to define several measurement models and to assess the extent to which the structure of the inequality space is consistent with those models. In all cases, our measurement models are best regarded as ideal types, with the question being whether the structure of inequality is becoming more or less consistent with such ideal types. We review here seven illustrative questions that may be taken on within this general framework.

1. *Can standard big-class or micro-class models capture the association in the inequality space?* The rise of multidimensionalism within economics has led to much fretting about the difficulty of parsimoniously characterizing the structure of inequality (Sen 1997). We have argued elsewhere that class models long favored by sociologists may provide the parsimonious solution to multidimensionalism that economists seek (Grusky and Kanbur 2006; Grusky and Weeden 2007). After all, class models make multidimensionality tractable by characterizing it in terms of a relatively small number of categories, each representing a distinct combination of endowments, working conditions, and rewards. The class of "craft workers," for example, has historically been made up of individuals with moderate educational investments (secondary school credentials), considerable occupation-specific investments in human capital (vocational and on-the-job training), average income, relatively high job security, middling social honor and prestige, and quite limited authority and autonomy. The underclass, by contrast, has been represented as a rather different package of endowments, conditions, and rewards. Although many definitions of the underclass have been offered, members are usually understood to have limited educational investments (secondary school dropouts), sporadic participation in the (legal) labor market, exceedingly low income from wages, limited opportunities for on-the-job training and virtually no authority or autonomy during (brief) bouts of employment, and much social denigration and exclusion. It is likewise possible to define other social classes as characteristic sets of endowments, working conditions, and rewards.

This type of class model is conventionally treated as an assumption, but here we treat it as a hypothesis that can be tested by forcing the latent classes of equation 2.1 to be perfectly defined by class membership. If such a constraint holds, it implies that the inequality space has a relatively low dimensionality—indeed, a dimensionality no more or less than the number

Figure 2.1 Big-Class Regime

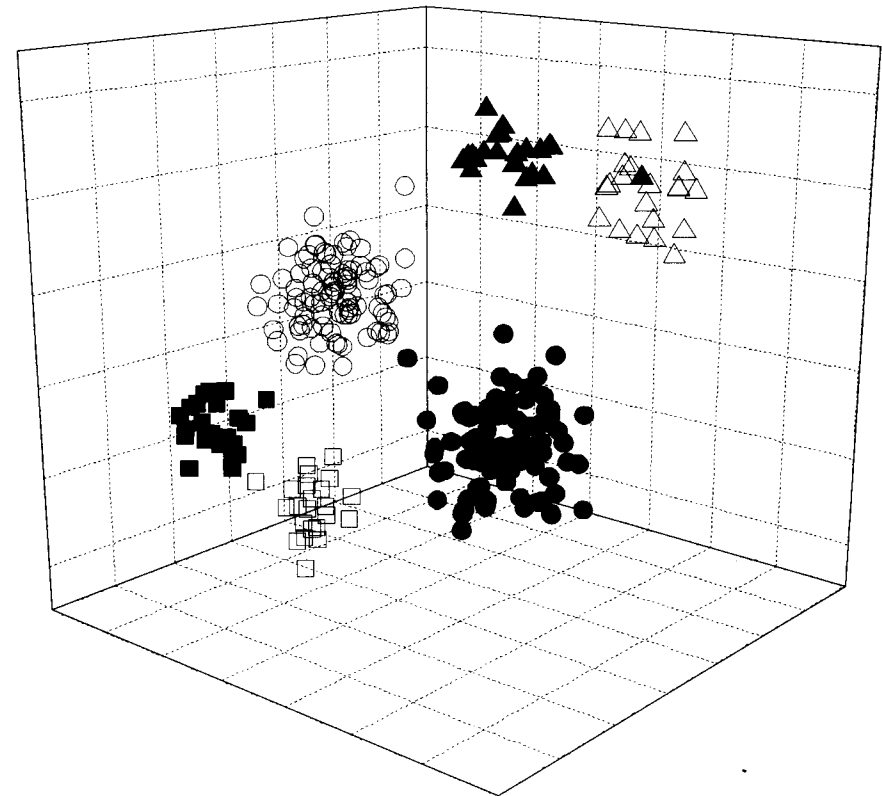


Source: Authors' compilation.

of postulated classes. The big-class solution, for example, implies that the underlying dimensions are independent of one another within each big class and hence that subdividing into micro classes is unnecessary (see figure 2.1). By contrast, the independence constraint is clearly violated in figure 2.2, meaning that further subdivision into micro classes is now required. Although our earlier research suggests that micro-class models are likely to outperform big-class models in the bivariate context (Weeden and Grusky 2005a, 2005b), we have not yet attempted a comprehensive evaluation of micro-class models in the context of the full multidimensional space.

2. *Are class models becoming more or less viable?* The latent-class approach may also be applied to address long-standing debates about trends in the shape of inequality. Is the takeoff in income inequality accompanied by the rise of well-defined social classes? Or are such classes instead breaking down? Is the labor market increasingly fracturing into separate occupational markets

Figure 2.2 Micro-Class Regime



Source: Authors' compilation.

(see, for example, Barley 1995)? Or is the labor market becoming increasingly "post-occupational" in form (see Casey 1995)? Are all forms of structure at the site of production, big-class and micro-class alike, withering away (Hall 2001)? The disciplines of economics and even sociology have fixated on the dramatic trends in income inequality over the last thirty years and largely ignored such questions. This fixation, while understandable, has diverted attention from the equally important question of whether the various dimensions of economic and non-economic inequality are coming together in ways that make the inequality space an increasingly classlike affair.

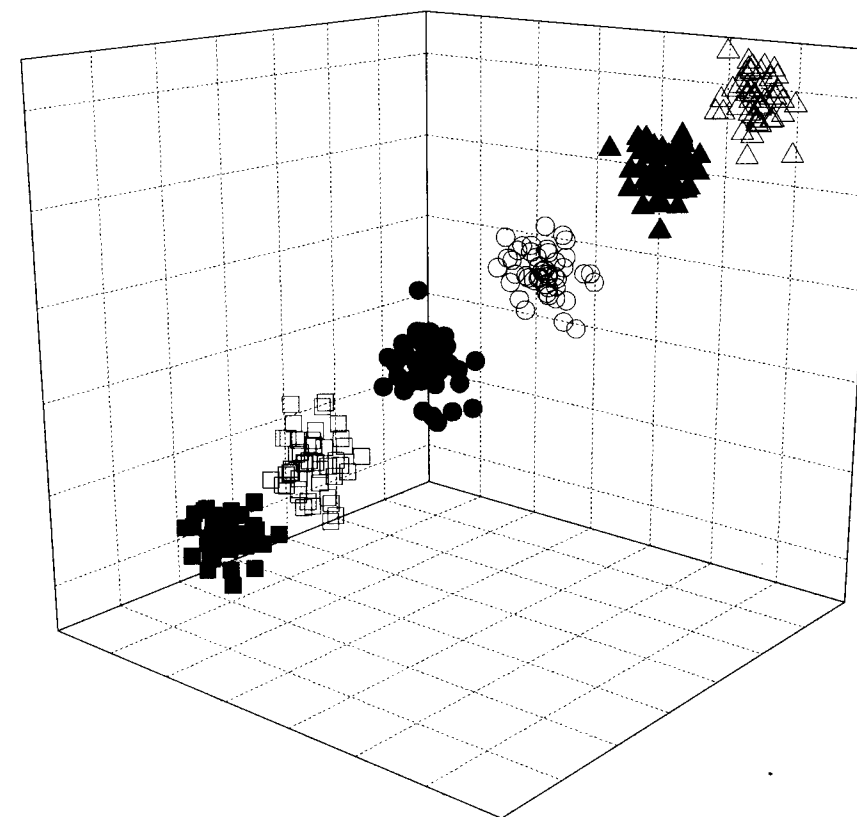
3. *Is the division of labor still central to the structure of inequality?* The long-standing presumption among sociologists has been that inequality is best measured at the "site of production" (see, for example, Parkin 1979). This presumption underlies class models that are defined by occupation (micro-class models), aggregations of occupations (big-class models), or

various job-level variables (authority, autonomy). We may distinguish such conventional site-of-production models from those that stress the centrality of either premarket endowments (such as education) or extra-market rewards (such as wealth). For example, John Meyer (2008) has suggested that class models are quaint artifacts of our early industrial past, artifacts to which scholars continue to cling even as “education classes” have come to capture the most fundamental cleavages of contemporary inequality (see also Brooks 2006; Pakulski and Waters 2001). We may test this hypothesis by forcing the latent classes of equation 2.1 to be perfectly determined by educational categories (high school dropout, high school graduate, college attendance, college graduate). Although a highly constrained model of this sort is not likely to fit well, it may provide over time an increasingly good approximation of the inequality space. We might likewise fit hybrid models that represent the inequality space as the combination of site-of-production cleavages (such as occupations) and qualification-based cleavages (such as education).

4. *Does poverty take on a class form?* The same logic can be adapted to assess whether class models adequately characterize that portion of the inequality space populated by the most disadvantaged workers (see Grusky and Weeden 2006).¹ Although many class analysts analyze only the paid labor force and thus define away the disadvantaged, it is surely worth testing more encompassing measurement approaches. It is conventional, for example, to distinguish between three disadvantaged classes: an “underclass” of individuals who are poorly attached to the labor force; a “formal sector” of poor workers who have a more substantial but still precarious attachment to low-wage laboring and service employment; and an “informal sector” of poor workers who subsist through an equally precarious attachment to self-employment in the laboring and service sector (for example, street vendors).² There are naturally many other class models of poverty and disadvantage that might also be assessed (Wilson 2006). We wish only to suggest that poverty classes can and should be subjected to the same empirical verification as class schemes pertaining to the nonpoverty population.

5. *Is the inequality space adequately represented by models that scale detailed occupations?* In figures 2.1 and 2.2, we represent a class structure that cannot be understood in simple gradational terms, as some classes are formed by combining high values on one dimension with low values on another. The gradationalist challenge to conventional class models involves the more aggressive claim that big classes or micro classes can be scaled on one or more dimensions (see figure 2.3). We can test for such a structure by estimating scale values for the manifest classes or, less restrictively, by imposing ordinality constraints on them (see Croon 2002; Rost 1988). This test for gradationalism is fundamental because it takes on the claim that all forms of advantage are increasingly concentrating at the top of the class structure and all forms of disadvantage are increasingly concentrating at the bottom of the class structure. Although there is much research on how particular

Figure 2.3 Gradational Micro-Class Regime

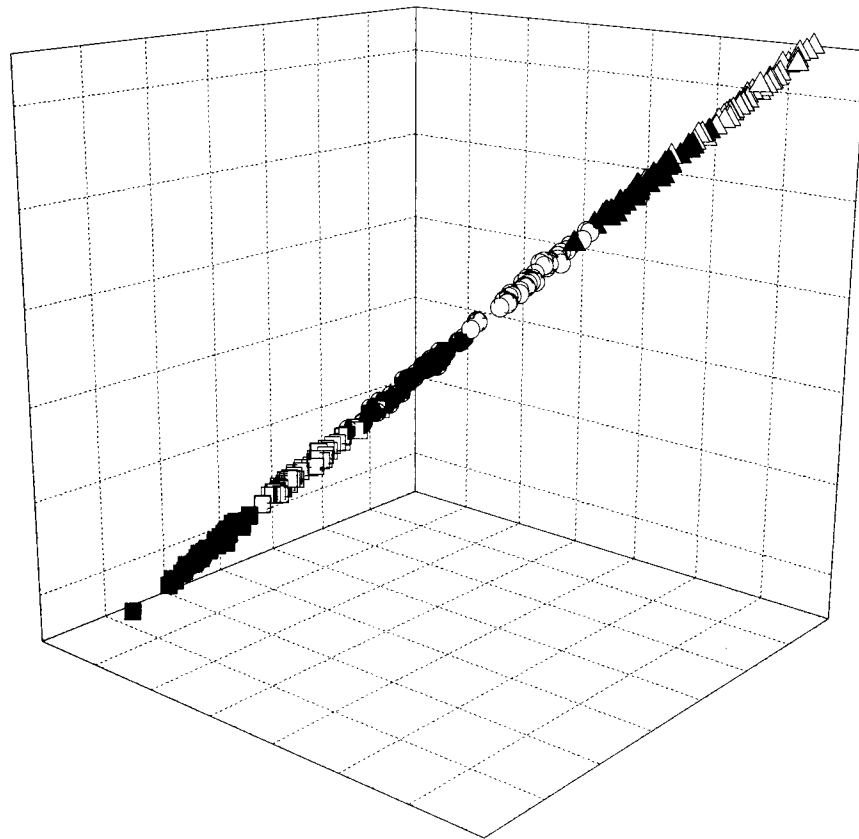


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dimensions of inequality (such as income) are changing, we do not know whether late industrialism has also brought on a form of crystallization in which the inequality dimensions themselves are coming together to create a more purely gradational structure to inequality.

We can also test whether these freely estimated scale values closely reproduce the famous socioeconomic gradient (see, for example, Bourdieu 1984; Hauser and Warren 1997; Nakao and Treas 1994). The socioeconomic index is in fact a particular type of class model that treats all detailed occupations with the same socioeconomic score as a micro class and also presumes that such socioeconomic scores adequately represent inequality in all the dimensions that the postulated inequality space encompasses. If this very strong constraint fails, scholars who insist on a gradational solution can still fall back

Figure 2.4 Fractal Individualized Inequality

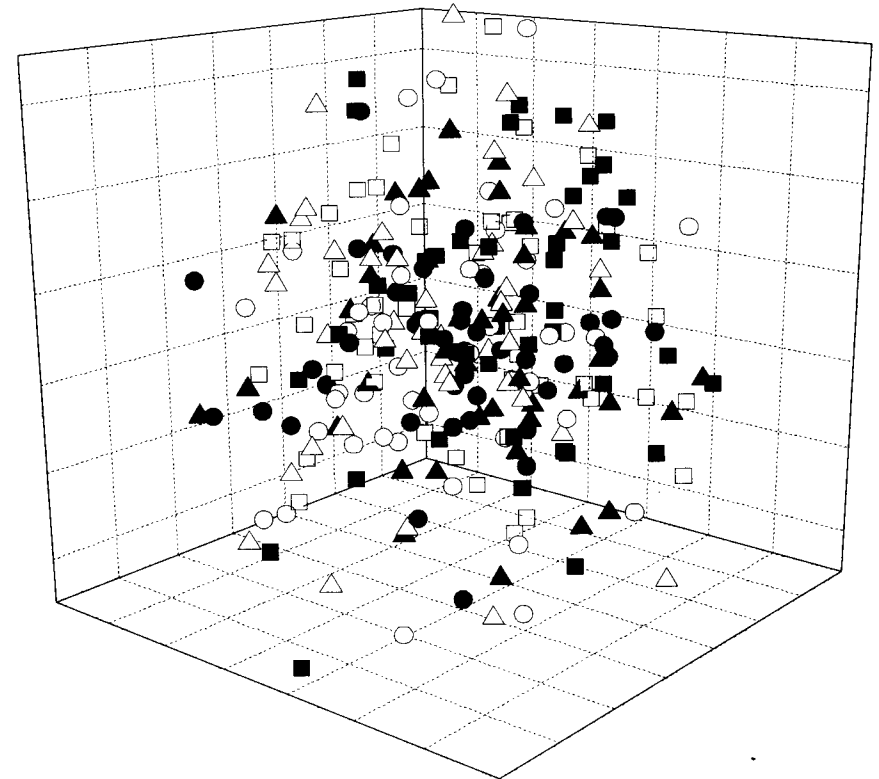


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on the estimated (rather than constrained) scale values for micro classes. These estimated scale values, which constitute the optimal occupation-based scaling of the inequality space, may serve as a replacement for conventional socioeconomic scores.

6. *Does inequality take on a fractal character?* Although the regimes of figures 2.2 and 2.3 are inconsistent with standard big-class models, they express the class concept in revised form by allowing for ungraded (figure 2.2) or graded (figure 2.3) micro classes. By contrast, figure 2.4 represents a case in which the class concept itself must be rejected because, no matter the level of disaggregation, the underlying inequality variables continue to covary with one another. This ideal type may be understood as an extreme micro-class solution in which the diagonal of figure 2.3 thins out to the point where each individual becomes a class unto himself or herself. We refer to this solu-

Figure 2.5 Disorganized Inequality



Source: Authors' compilation.

tion as fractal because the same gradational solution is apparent at each and every level of disaggregation. The economist should recognize this solution as consistent with the claim that income is a master variable, that it perfectly signals all other individual-level measures of inequality, and that no higher-level class organization therefore appears. Obviously, this ideal type would never be empirically realized in such extreme form, but it is nonetheless important to ask whether the simple economic model comes closer to being realized in some societies or time periods than in others.

7. *Is inequality becoming increasingly disorganized?* The regime of figure 2.5, unlike that of figure 2.4, does not allow the underlying individual-level variables to covary. This may be understood as a "one-class" solution or, equivalently, a nonclass regime. Although there is much inequality under this specification, it takes a uniquely 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 represents a form of inequality that some postmodernists (Pakulski 2005; Pakulski and Waters 2001) argue is emerging. If they are correct, it means that the growth in income inequality is at least counterbalanced by a decline in the association between income and other forms of inequality.

We cannot claim to have exhausted the many ideal-typical forms that either class-based or classless inequality regimes might assume. Rather, we wish merely to stress the importance of developing a methodology for characterizing the form as well as the extent of inequality, a task that takes on special importance once the multidimensionality of inequality is appreciated. If properly elaborated, our approach also can provide a comprehensive framework for comparative multidimensional analyses of inequality, one that will allow us to consider not just cross-societal differences in the amount of inequality but also cross-societal differences in how that inequality is expressed and organized. Moreover, this approach will allow us to test long-standing—and long-untested—assumptions about the structure of inequality that are in part embedded in disciplinary divides.

Effect-Calibrated Operationalizations

The “pure” analyses described here can yield new insights into the underlying structure of inequality, how that structure is changing over time, and the relative power of competing measurement paradigms in representing such inequality. How might defenders of the income paradigm, the socioeconomic paradigm, or the class analytic paradigm react if it were shown that their preferred measurement approach does not represent the inequality space all that well? The standard response, we suspect, would be to counter that these paradigms were devised merely to capture those features of the inequality space that are consequential for social behavior (such as mobility, voting, or consumption), not to represent the structure of that space in its entirety (see Goldthorpe and McKnight 2006). If we wish, then, to convince others that measurement decisions should be founded on empirical considerations, we need to examine not just the underlying structure of the inequality space but also how a person’s location within that structure affects a wide range of dependent variables.

It follows that a convincing empirical case for any particular measurement device must be forged on the twin claim that it provides a parsimonious account of the multidimensional space of inequality and that it has net effects on attitudes and practices that are not reducible to the effects of the constituent dimensions of the inequality space. The first claim is addressed with the latent-class analyses described in the preceding section. The second

claim, to which we turn now, can be addressed by estimating class, income, or socioeconomic effects in the context of more comprehensive controls and more convincing specifications than have yet been attempted. In this second line of analysis, we consider whether classes or socioeconomic scales have true emergent effects on behaviors and attitudes rather than effects that could be explained in terms of the endowments, working conditions, or rewards with which such classes or socioeconomic scales are defined.³

It is striking that sociologists increasingly use class or socioeconomic models out of tradition, convenience, or habit rather than any strong conviction that these models capture the mechanisms through which inequality exerts its effects. There are three main lines of argument that appear to inform this contemporary loss of faith in the class realist position. First, postmodern and poststructural scholars have argued that social class has lost whatever power it once had, partly because other identities (such as race and gender) have become more prominent and “squeezed out” class-based identities (see, for example, Bradley 1996), but also because identity formation in the postmodern world is so atomized and individualized that all structural bases of social behavior become irrelevant (see Hall 2001), or because the institutions that once represented class interests (such as political parties and unions) have developed into new forms that are less class-based (see, for example, Clark and Lipset 2001; see also Hechter 2004). Regardless of the particular form of the argument, the expectation is that “emergent effects” of classes have become less prominent over the past quarter-century or more.

The second, and by far more common, line of anti-class argumentation questions not whether strong class effects will appear in conventional quantitative models, but rather whether such effects should be attributed to true class-based processes and mechanisms. The claim here is that the net class effects that routinely appear in quantitative models are generated entirely by selective processes (see Meyer 2008), with the implication that these effects would disappear if the variables on which selection occurs could be fully controlled. The service class in the Erikson and Goldthorpe (1992) scheme, for example, might appear to be more tolerant of alternative lifestyles merely because its incumbents are especially likely to have attended elite colleges where social tolerance is preached. Although selection-based arguments of this sort are ubiquitous, what has been lacking is a test of them that rests on comprehensive individual-level models that correct as convincingly as possible for such selective processes.

The third main line of anti-class argumentation comes from a more surprising source. In recent years, John Goldthorpe (2000) and Richard Breen (2005) 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. These authors have argued that classes index the “form of regulation of employment” (such as salaried or short-term contract), with this underlying variable presumed to

affect how workers understand their interests and thus settle on particular beliefs, practices, or courses of action. This interpretation implies that the class concept is in the end superfluous because the true causal effect is not exerted by the class per se but by an underlying variable that class membership signals (the “form of regulation of employment”). The obvious question is whether anything is gained by pushing a nominalist analysis through a class fulcrum in this fashion. Why not abandon the pretense of class altogether and simply measure at the job level the various working conditions that classes putatively signal?

It follows that the realist case for class requires that scholars demonstrate net class effects in the context of a model that not only eliminates selection effects but also purges the effects of those working conditions (such as employment form) and job rewards (such as income) that may govern the calculation of interests. If such an analysis reveals that classes have no net effects, we can conclude that the class concept is superfluous and that the variables constituting the inequality space should be directly used in quantitative modeling.

We suspect that such tests will instead indicate that the class concept has merit and that class analysts have nothing to fear. Why might net effects of class be detected even with such rigorous controls? The standard argument in this regard is that classes constitute particular “packages” of rewards and working conditions that, in combination, lead to an *emergent* logic of the situation, a logic that then governs social action. The underclass, for instance, may be understood as a combination of negative conditions (intermittent labor force participation, limited education, 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. To be sure, a committed reductionist might counter that we need merely include the appropriate set of interactions between the constituent variables, but insofar as classes define the relevant packages of interacting conditions, this objection becomes an unduly complicated way of sidestepping the reality of classes.

The argument for a net class effect also rests on the claim that class-defined packages of conditions are associated with distinctive cultures that take on a life of their own and thus independently shape behavior and attitudes. At minimum, class cultures may be understood as “rules of thumb” that encode best-practice behavioral responses to the working conditions that classes entail, with these rules then allowing class members to forgo optimizing calculations themselves and to rely instead on economical shortcuts to best practices (see, for example, Goldthorpe 2000). More ambitiously, it is sometimes argued that truly maladaptive class cultures emerge, such as a “culture of poverty” that filters information in unduly cynical ways and engenders an excessive sense of futility and despondency (see Wilson 2006). It is notable that in either case classes play a role in empirical models of

inequality that is similar to the role of neighborhoods in the neighborhood effects literature. Namely, classes are expected to have net effects on a wide range of behaviors, interests, and attitudes that are not reducible to mere selection or to constituent working conditions.

We have assumed to this point that the main coefficients of interest are the true causal effects of contemporaneous class on attitudes, behaviors, lifestyles, health, fertility, and the host of other demographic dependent variables that sociologists and other social scientists routinely analyze. Although much of quantitative sociology relies on such measures of contemporaneous class, there is also continuing interest in treating class of origin as a “parental background” variable. This type of measurement allows scholars to assess the extent to which life chances vary by social origins and hence opportunities are unequally distributed. Because many economists and philosophers now work within the “capabilities approach” (see, for example, Sen 1997), the emerging fashion is to treat reward-based measures of inequality, such as income, as affected by differential tastes (including tastes for leisure or consumption) and hence reflective of preferences as well as true inequality. Within this tradition, measures of opportunity or “capability” are featured because, by contrast, they speak to inequalities that predate the operation of tastes or preferences. This line of reasoning implies that a comprehensive test of the class concept entails assessing its usefulness in representing origins as well as destinations (Grusky and Weeden 2006).

Is there any reason to believe that scholars need the class concept to measure origins? Although we think that there is, it is again the case that social scientists have simply defaulted to class-based measurements of origins without providing even minimally satisfactory evidence that they add anything beyond a reductive model resting on separate measurements of parental endowments, working conditions, and rewards (see Hauser 1973). The conventional, if untested, view is that such a reductive model falls short because parents transmit information, skills, networks, and tastes that reflect not just their education or income but also their class position (Grusky and Weeden 2002). The children of sociologists, for example, are more likely to themselves become sociologists because they know about and aspire to such a role, have special access to high-quality information about how to train for such a role, have special access to the human capital that will assist them in preparing for such a role, and have special access to social networks that may also provide some small advantage in securing such a role. It will not suffice, therefore, to simply fit a “parental income” effect in models of income determination, given that the children of sociologists will disproportionately follow income trajectories that are specific to sociologists rather than the larger group of workers with sociology-sized family incomes (see, for example, Grusky and Weeden 2006).

The challenge, then, is to offer convincing evidence that class effects are not reducible to investments and endowments that drive selection into particular classes or reducible to rewards that constitute a set of background conditions in terms of which interests are gauged and behaviors selected. We also require models that will allow us to estimate the net effects of class, income, or socioeconomic status in both the contemporaneous and intergenerational context.

The obvious starting point for this task is the usual array of general linear models in which the link function (such as linear or logistic) differs by the type of measurement for the outcome variable. The following model, for example, may be used to assess whether there are net effects of class, income, or socioeconomic status on (binary) vote choice:

$$Y_i = \alpha + X_i\beta + I_i\delta + C_i\varphi + \varepsilon_i, \quad (2.2)$$

where Y_i is the logit of vote choice, X_i is a vector of variables measuring the social and demographic "causes" of voting (such as age, sex, race), I_i is a vector of endowments (such as education, labor market experience), working conditions (such as firm tenure, union membership, self-employment status), and rewards (such as income) that together define the inequality space, C_i includes the dummy variables pertaining to the categories of the preferred class scheme, and ε_i is an error term. If we wish instead to condition on a socioeconomic index, doing so of course requires the further constraint that the class effects (on C_i) are consistent with a socioeconomic gradient. The effects of family background on outcomes could also be represented within the context of equation 2.2 by converting I_i and C_i into measurements for the parents rather than for the children (and Y_i would now presumably pertain to income or some other career outcome). The resulting models would differ from conventional status attainment models because they would contain far more measures of the underlying inequality space (see Hauser 1973; for more details, see Grusky and Weeden 2006).

There are two ways in which such analyses might lead to the conclusion that class or socioeconomic measurement (via C_i) should be preferred relative to a purely reductive strategy in which inequality is represented in terms of an individual-level vector of endowments, working conditions, and job rewards (I_i). First, the fit statistic for the model of equation 2.2 may be superior to that for a trimmed model that eliminates C_i , implying that there are true emergent effects of class or socioeconomic status. This conclusion rests merely on establishing that the effects of C_i , taken together, are substantial enough to be preferred by BIC (for a Bayesian) or a standard F-test or likelihood-ratio contrast (for a classicist).⁴ Of course, if the models show that both class and reductive measures have net effects, sociologists would be well advised to adopt hybrid models of inequality rather than relying on class or socioeconomic status alone.

Even in the absence of such emergent effects, the results may still support a second, nominalist rationale for class or socioeconomic operationalizations. If the model of equation 2.2 shows that simple class or socioeconomic measures can account for the vast majority of individual-level effects, we might still justify conventional sociological practice as a relatively inexpensive, albeit imperfect, approach to measuring inequality. We can assess whether conventional schemes can capture much of the effects of inequality by contrasting the fit statistic for the model of equation 2.2 against that of a model that eliminates elements of X_i . If the trimmed model performs well (using, for example, a BIC criterion), we can conclude that class or socioeconomic measures are (potentially) justifiable for reasons of parsimony or convenience.

Conclusions

The spectacular rise in income inequality has reinvigorated inequality research and generated one of the most prominent research literatures in contemporary social science. This literature has focused almost exclusively on trends in the *amount* of inequality and has all but ignored possible changes in the *form* of inequality. We are accordingly left with many unasked and unanswered questions: Is inequality increasingly taking on a class form? Are social classes disappearing even as income inequality is growing? Is there a simple gradational structure to inequality? Or are many individuals in ambiguous situations that combine advantage and disadvantage in complicated ways?

The foregoing questions will continue to be ignored insofar as measurement choices remain largely determined by disciplinary ties or by commitments to certain theoretical schools. These commitments appear to be as strong as ever: the class analyst presumes classes and studies inequality through a class lens; the economist presumes gradationalism and studies inequality through a gradational lens (income inequality); and the stratification scholar presumes "socioeconomic" inequality and studies inequality through a socioeconomic lens. Although some scholars reject conventions of this sort, they nonetheless remain very much the norm.

We have proposed here a two-pronged modeling framework that converts such disciplinary assumptions into testable hypotheses. The first part of this framework allows us to test whether conventional simplifications of the multidimensional inequality space are empirically tenable. These simplifications, which are ultimately assumptions about the form and structure of inequality, are best treated as hypotheses that can then be subjected to test. If this descriptive task has been given short shrift in the past, it is largely because the necessary methods have not been available, not because of any shortage of fundamental questions about the form of inequality (see Grusky and Kanbur 2006; Kanbur 2001): We have shown that a latent-class frame-

work provides a potentially useful methodological foundation for a new research agenda on the shape and form of inequality.

The second part of our framework addresses the causal effects of class and other measures of inequality. In individual-level models of all kinds, scholars typically include measures of social class, income, or socioeconomic status as covariates, either because of an intrinsic interest in the effects of such variables or merely as a means of securing unbiased estimates of other effects with which these measures are associated. These covariates routinely appear, for example, in models of health (Robert and House 2000), mortality (Martikainen, Valkonen, and Martelin 2001), marriage and cohabitation (Smock 2000), fertility (Bollen, Glanville, and Stecklov 2001), divorce (White and Rogers 2000), migration (Iceland, Sharpe, and Steinmetz 2003), political behavior (Hout and Moodie 2007), attitudes (DiMaggio 2001), and lifestyles and consumption practices (Chan and Goldthorpe 2005).⁵ In some cases, the availability of particular inequality measures dictates the choice of a measurement approach, but clearly there are also large and seemingly unjustifiable effects of discipline, type of dependent variable, and research camp on the preferred measure of inequality.

The class model, long the mainstay of sociological research, is becoming less popular within many subfields. If the sociological model of class is to survive, it is doubtful that it will happen because economists and other social scientists suddenly decide to mimic the research practices of sociologists or to read the famous treatises on class and status provided by Marx, Weber, and their followers. Rather, a compelling *empirical* defense of the payoff to class or socioeconomic models is required, without which we can expect economists and other social scientists to continue to privilege individualistic models and thereby dismiss or ignore the sociological legacy. Obviously, it would be harmful to the discipline of sociology if its premier measurement choice were superseded by other approaches, but of course the only legitimate scientific question is whether such a loss would lead to less powerful accounts of the structure of inequality.

This is an opportune time to intervene in such measurement debates because many economists are themselves coming to doubt the adequacy of the "income paradigm" and are actively shopping for multidimensional or categorical alternatives to conventional income reports (Bourguignon 2006; Duclos, Esteban, and Ray 2004; Sahn and Younger, forthcoming; Sen 2006). Are class models a viable multidimensional alternative to the income paradigm? If a strong empirical case for class models is made, we think such models may develop a renewed following. There is, to be sure, no guarantee that class or socioeconomic models will pass this empirical test. If they do fail, sociologists had best face up to this result now and jettison that part of the discipline's intellectual history that proves to be an empirical dead-end. It is no longer tenable to merely duck the question.

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Notes

1. In theory, we could also test hypotheses about the most advantaged regions of the inequality space, although survey data are typically too sparse in such regions to make definitive tests possible.
2. If the poverty space is further differentiated by geography, it might be necessary to distinguish urban and rural variants of each of the foregoing three classes, thus yielding a six-class solution. This type of model may be understood as a hybrid specification in which classes are defined both within the site of production and outside it (via geography).
3. The case for socioeconomic scales rests implicitly on the presence of contextual effects. When a socioeconomic scale is used, the assumption is that occupations with the same status form a "class" and that the contextual effects of such classes follow a simple socioeconomic gradient (see Hodge 1981). Although advocates of classes and socioeconomic scales must therefore be prepared to defend the concept of contextual effects, advocates of income or earnings scales need not (because the latter scales are measured at the individual level).
4. The variables in I_i will likely be highly intercorrelated, but this is unproblematic because such variables are only serving as controls (and hence their independent effects need not be distinguished).
5. It has long been suspected that inequality has equally profound effects on macro-level outcomes (economic output, terrorism, revolution), but here the evidence is more mixed and the debates more contentious (see, for example, Krueger and Malečková 2003).

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