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Comparative Sociology and the Comparative Method

CHARLES C. RAGIN

Northwestern University, Evanston, U.S.A.

Introduction

"THINKING WITHOUT comparison is unthinkable. And, in the absence of comparison, so is all scientific thought and scientific research." (Swanson 1971: 145). (See also Cassirer 1946: 25-6.) It is clear that the comparative method in this broad sense constitutes the core of social scientific methodology. Even statistical techniques are based on aggregated comparisons of relevant cases. While virtually all social scientific methods are comparative in this broad sense, in sociology the term comparative method usually is used to refer to a specific kind of comparison, the comparison of whole societies. In fact, the comparative method traditionally has been treated as *the* method of comparative sociology, the branch of sociology concerned with cross-societal differences and similarities (Easthope 1974).

Recently, however, several comparativists have argued that there is nothing fundamentally distinctive about either comparative sociology or the comparative method (see Grimshaw 1973: 18; Smelser 1976). Smelser (1976: 2-3), for example, claims that comparative social scientific inquiry is not a "species of inquiry independent from the remainder of social scientific inquiry" and that "the analysis of phenomena in evidently dissimilar units (especially different societies or cultures) should have no methodological problems unique to itself." According to Smelser (1979: 5), this continuity between comparative and noncomparative work exists because their respective goals are identical—to explain social phenomena by establishing controls over the conditions and causes of variations in those phenomena. (See also Armer 1973: 50.) Any technique that furthers the goal of explaining variation, according to this reasoning, is a comparative method.

This position, that there is nothing truly distinctive about comparative sociology and that virtually all sociological methods are comparative methods, is not the position that I will take in this essay.[1] It is not an unsound position,

1 My intention in this essay is to emphasize the distinctiveness of the comparative method and to discuss literature relevant to the comparative method. I pay less attention to recent advances in quantitative statistical methods relevant to comparative work.

and it is attractive because it supports the notion that sociology is a unified discipline. It ignores the fact, however, that a fundamental metatheoretical difference separates comparativists from noncomparativists and that this fundamental metatheoretical difference impinges on the practice and methods of comparative sociology. It is this impingement that is the main concern of this paper. Before I discuss its precise nature and the problems that some comparative sociologists have encountered when they have tried to free themselves from its constraints, I discuss the field of comparative sociology itself. Specifically, I address issues surrounding the claim that comparative sociology is not distinct from the rest of sociology, a claim that I do not support.

Is Comparative Sociology Distinctive?

There have been several intelligent attempts to delineate the field of comparative sociology. Yet, there is still little agreement today concerning its boundaries. Immediate evidence of this lack of agreement is contained in this volume. The editors deemed it prudent to supply potential contributors with a working definition of comparative social research so that their reviews of recent comparative work could be managed. The definition of comparative research suggested by the editors, research that uses comparable data from at least two societies, emphasizes the *data* of comparative sociology, the fact that its data are cross-societal (see also Andreski 1965: 66; Armer 1973: 49). While this is an acceptable working definition of comparative sociology, most comparativists would find this definition too restrictive. It excludes, for example, comparatively oriented case-studies. Tocqueville's (1945) *Democracy in America* is excluded, as is Durkheim's (1961) *The Elementary Forms of the Religious Life*. Are these works not at least implicitly comparative? To define comparative sociology in terms of its special data is a misleadingly concrete way to define the subdiscipline.[2]

Others have attempted to differentiate the field of comparative sociology by emphasizing its *multi-level* character (e.g., Rokkan 1966: 19-20). Przeworski and Teune (1970: 50-1) argue that truly comparative work proceeds at two levels simultaneously, at the level of systems (or societal level) and at the within-system level.[3] According to their argument, any analysis that is based on only societal level similarities and differences is not truly comparative, even if this analysis includes an examination of aggregations of within-system characteristics. For example, if an investigator uses system level variables to explain variation in a dependent variable based on aggregations of individual

2 Note especially that questions concerning the nature of society, what distinguishes a society, etc. are left unaddressed.

3 Although Przeworski and Teune are clearly interested in societies as systems, they argue that many different types of aggregates (e.g., cities) may be viewed as systems. Thus a multi-level study of cities and individuals in a single society would qualify as comparative by their definition.

level data within each system, the study would not qualify as a comparative study according to Przeworski and Teune. Ideally, system level variables should be used to explain variations across systems in within-system relationships. Alford's (1963) study of international variation in class voting qualifies as a comparative study by these criteria because he uses system level variables (degree of industrialization and urbanization) to explain differences between countries in within-system relationships (the strength of the relationship between class and party support). Przeworski and Teune's definition of comparative inquiry is clearly idiosyncratic, and it is much more restrictive than even the first definition considered above. Comparatively oriented case studies are excluded as are quantitative cross-national studies that use only aggregate, national level data. (Note that quantitative cross-national studies focus directly on cross-societal similarities and differences.)

While Przeworski and Teune's definition of comparative inquiry is restrictive, it highlights one of the fundamental problems faced by comparativists. They often are engaged in multi-level analysis, and one of these levels is invariably the societal (or systems) level. Grimshaw's (1973: 4-5) definition of comparative work also signals the dependence of the comparativist on systems. He argues that the task of comparative sociology is to distinguish between empirical regularities that are *system-specific* and those that are *universal* (see also Etzioni and Dubow 1970: 1-7). Grimshaw's definition of comparative work contains an interesting addendum relevant to the comparativist's use of systems. Grimshaw (1973: 4) states, "I will defer discussion of what constitutes a system." This avoidance is not uncommon; most comparativists are more interested in making comparisons than in defining the objects of their comparisons (see Andreski 1965: 66). The fact remains, however, that comparativists compare societies. They must concretize the abstract concept of society in order to engage in comparative inquiry. Though their concretizations are usually *de facto* (i.e., the concept of society is rarely defined), the concept must be operationalized in the course of comparative work.[4]

This direct, empirical implementation of the abstract concept of society is a metatheoretical act, and it separates comparativists from noncomparativists. In order to compare societies, the comparativist must identify them. To identify them is to implement the abstract concept of society. The comparativist thus assumes, at least implicitly, that societies exist and then defines them (usually by default) in the course of his/her research. The fact that the difference between comparativists and noncomparativists is a metatheoretical difference has been obscured by the tendency of *all* sociologists to claim that they study societies or that sociology is the study of society. For the noncomparativist, however, the term society is and remains an abstraction. Noncomparativists can assure themselves that the patterns and processes they study ex-

4 A notable exception to the general tendency to avoid defining society is found in Marsh (1967: 12-15).

ist in a society, some society, and not concern themselves with what constitutes a society. The concept need not be operationalized. For the comparativist, the term society refers to a particular level and unit of analysis that impinges on his work in a very fundamental manner.

The metatheoretical nature of the difference between comparativists and noncomparativists is illustrated best by example. Consider first an investigation that concludes that a significant positive correlation between educational attainment and occupational mobility exists in a sample of U.S. residents because 'the U.S. is a meritocratic society.' This conclusion concretizes the term society by providing an example (the U.S.) and by implying that there are other societies, some of which are meritocratic and some of which are not. If the investigator had concluded instead that the positive correlation he/she observed exists because 'education provides individuals with marketable skills' or because 'motivated individuals try to maximize their educational and occupational opportunities,' then he/she would have avoided concretizing the abstract concept of society and thereby would have avoided engaging in comparative sociology. This is not *simply* a matter of goals (and it certainly is *not* a matter of data sources). The crucial distinction is metatheoretical.

It would be erroneous at this point to conclude simply that comparativists differ from noncomparativists in their chosen unit of analysis. The example supplied above suggests that any data unit can be used in comparative research. All that matters is how the results of research are understood. If they are explained in a cross-societal manner, then the research is comparative. The fact that the explanations of comparative sociology are cross-societal, however, implies that unit of analysis considerations are relevant, for the explanations of comparative sociology use a particular unit, society.

Comparative Sociology and the Question of Units

Very little continuity exists in the discussions of units of analysis offered by comparatively oriented social scientists. An important source of this lack of continuity is the simple fact that the term unit of analysis is used to describe two very distinct metatheoretical constructs. Sometimes unit of analysis is used in reference to data categories. In a quantitative cross-national study of dependency and economic development, for example, an investigator might state that his/her unit of analysis is the nation-state because he/she uses data collected at that level. At other times, however, the term unit of analysis is used in reference to theoretical categories. Wiener (1976), for example, in a review of Barrington Moore's *Social Origins of Dictatorship and Democracy*, states that Moore's unit of analysis is "class." Wallerstein (1974: 1979) argues in various works that there is only one valid unit of analysis in comparative sociology, the "world-system." Upon close examination, however, one finds that Moore's cases are different countries and Wallerstein's discussions of the modern world system are rife with references to nation-states and with comparisons of, for example, core countries and peripheral countries.

The fact that the term unit of analysis has been used in reference to data categories and to theoretical categories has created a great deal of confusion in the field of comparative sociology. Some followers of Wallerstein, for example, have attacked those who use the nation-state as a unit of analysis (in the data category sense), arguing that this practice violates world systems theory and results in meaningless tests of its propositions (see, e.g., Bach 1977). Other researchers have attempted to use the modern world system as a unit of analysis in the data category sense and have examined cycles and trends in the world as a whole (e.g., Bergesen 1980). It is clear from Wallerstein's discussion and from his actual analyses of the world system, however, that his argument is that the world system is the only valid unit of analysis in the theoretical category sense mentioned above, not in the data category sense.

This tension between the two meanings of unit of analysis has existed in the comparative sociology literature since the early 1960s. Issues associated with the aggregation problem have compounded the terminological difficulties and confusion. Allardt (1966: 339-41), for example, attempted to draw a distinction between "data units" and "analytical units," arguing that the latter are more theoretically relevant. In a similar vein, Scheuch (1966: 164) argued that comparativists should distinguish between "units of observation" (see also Walton 1973: 176) and "units of inference." In an early statement of their methodological position, Hopkins and Wallerstein (1970: 183), contrasted "research sites" and "theoretical units." Several authors attempted to clarify the situation by limiting their comments to "units of comparison" (Eisenstadt 1966: 86; Etzioni and Dubow 1970: 7; Czudnowski 1975: 27). Finally, Przeworski and Teune (1970: 8, 49-50) attempted to distinguish between "levels of observation" and "levels of analysis." Most of these discussions, I believe, were stimulated by the ambiguity associated with the term unit of analysis. For most noncomparative sociologists, the term presents no special problems. Their analyses and their explanations typically proceed at the individual or institutional level. This is rarely the case in comparative sociology, where the analysis often proceeds at one level (e.g., individual, as in the example above) and the explanation is couched at another level (characteristically, at the societal level).

To clarify the unit of analysis question in comparative sociology it is necessary to distinguish between *observational* units and *explanatory* units. This distinction follows my discussion above concerning the two meanings of unit of analysis, as a data category and as a theoretical category. Observational unit refers to the unit used in data collection and data analysis; explanatory unit refers to the unit that is used to account for the pattern of results obtained. In the occupational mobility example mentioned above, the observational unit is the individual (the correlation is based on individual level data), and the explanatory unit is societal. The distinction I have drawn here between observational and explanatory units is roughly comparable to Przeworski and Teune's distinction between levels of observation and levels of analysis. In their discus-

sion the term levels of observation refers to different data collection units, while the term levels of analysis refers to the various levels (e.g., individual, institutional, societal, etc.) at which explanations may be couched.

According to the arguments I have presented up to this point, comparative sociology is distinct from noncomparative sociology because it uses a particular explanatory unit, the society or system. More specifically, I argue that whenever an investigator's explanation makes explicit use of societal or systems level similarities or difference, he/she is engaging in comparative sociology. The use of such explanations is based on two metatheoretical assumptions: (1) that societies exist, and (2) that the societal level is an appropriate and desirable explanatory level. I turn now to an examination of the methodological consequences of these assumptions.

Methodological Consequences and Implications

The explanation that there is a positive association between educational attainment and occupational mobility in a sample of U.S. residents because 'the U.S. is a meritocratic society' implies that: (1) Societies can be defined. (2) They can be classified as meritocratic and not meritocratic. And (3) that in meritocratic societies there is a positive association between educational attainment and occupational mobility, while in societies that are not meritocratic there is no such association. (The explanation suggests further that nation-states are societies because the only society mentioned is a nation-state, but this is a separate issue.) Because societies are (at least apparently) definable, an investigator conceivably could draw up a list of them, classify them as meritocratic and not meritocratic, and then (1) examine the degree to which meritocratic societies agree in manifesting positive associations between educational attainment and occupational mobility at the individual level, and (2) the degree to which societies that are not meritocratic agree in not manifesting such associations. If these two patterns of agreement can be established, then the general statement (that in meritocratic societies educational attainment promotes occupational mobility) used to explain the particular instance (the positive association between educational attainment and occupational mobility in U.S. society) is supported.

Unfortunately, social scientific investigation is not this facile. There are many practical problems associated with establishing cross-societal demonstrations such as the one described above. Most of these practical problems concern the comparability of relatively dissimilar societies. For example, an investigator might doubt the cross-societal comparability of his/her measures of educational attainment and occupational mobility. Societies have very different occupational structures, and few common occupational categories exist across dissimilar societies. Consequently, it is difficult to construct comparable cross-societal measures of mobility. An investigator might also have doubt about his/her classification of societies as meritocratic and not meritocratic. It

might prove difficult, for example, to distinguish completely meritocratic societies from partially meritocratic societies. These are serious problems, and they have absorbed the attention of comparative sociologists for some time. In fact, many discussions of comparative methods have concerned these issues almost exclusively.[5] There is a more fundamental issue at stake here, however, an issue that is a more directly relevant to the metatheoretical assumptions of comparative sociology outlined above.

It is difficult to evaluate explanatory statements that cite societal level similarities and differences (i.e., the explanatory statements of comparative sociology) because the number of societies available for such assessments is limited by empirical constraints and by theoretical strictures. Even the investigator who claims that he/she is interested in all societies and defines societies as all contemporary nation-states encounters serious statistical problems if he/she attempts a quantitative analysis of these cases (see below). A seemingly large set of over 100 nation-states can be reduced by one-half if there are problems with missing data. Often, the remaining cases are not representative of the original 100+ nation-states, much less of all societies (or of all systems). Theoretical strictures also reduce the number of relevant cases. In the analysis of meritocratic and nonmeritocratic societies discussed above, for example, it is possible that the general statement (that educational attainment promotes occupational mobility only in meritocratic societies) is theoretically meaningful only when applied to advanced industrial societies. If this were the case, then the investigator would first draw up a list of advanced industrial societies and then distinguish between meritocratic industrial societies and nonmeritocratic industrial societies. Generally speaking, the greater the theoretical specificity, the smaller the number of cases relevant to a particular investigation.

The smaller the number of relevant cases, the greater the likelihood that the investigator will find it difficult to evaluate an explanatory statement. For example, in order to assess the general statement that in meritocratic societies educational attainment promotes occupational mobility, it would be necessary to draw up a list of societies and to classify them as meritocratic and not meritocratic. Even if an investigator could show that educational attainment promotes occupational mobility only in societies classified as meritocratic, it is still unlikely that this demonstration of the general statement would be uncritically accepted by other social scientists. Other investigators, no doubt, could take the same two sets of societies and suggest equally valid ways of defining the difference between the two sets, other than meritocratic versus not

5 Most of these discussions are of cross-national *survey* research. An extensive literature on the methodological problems associated with this kind of research exists. Unfortunately, space limitations prevent me from reviewing this literature in this essay. Interested readers should consult Rokkan (1968), Rokkan, Verba, et al. (1969), Warwick and Osherson (1973), Armer and Grimshaw (1973), and Szalai and Petrella (1977).

meritocratic. For example, listings of industrial and nonindustrial societies might perfectly reproduce the listings of meritocratic and not meritocratic societies. To distinguish more bureaucratic from less bureaucratic societies might also produce identical listings. The use of interval scale measures of extent of meritocracy, bureaucracy and industrialization would do little to improve the situation. No doubt, these measures would correlate very strongly with each other, and multivariate analyses of their separate effects on cross-societal variation in the relationship between educational attainment and occupational mobility would be severely impaired by the profound multicollinearity that would exist among them.[6] The basic problem is that there is a limited number of societies and that any ranking or categorization of them can be described conceptually in a variety of ways.

Sometimes there are more explanations for a particular phenomenon than there are examples of it. Theoretical strictures often reduce the number of relevant societies to a mere handful. In such investigations it is impossible to adjudicate between batteries of competing explanations. In the language of the statistical method, the use of societies in explanatory statements often presents serious degrees of freedom problems, for the number of relevant explanatory variables may exceed the number of cases.

As the number of relevant cases decreases, the possibility of subjecting cases to rigorous statistical analysis diminishes. Other methods must be used. Smelser (1976: 157) argues that the method of "systematic comparative illustration" (a method he portrays as a crude approximation of the more sophisticated statistical method) must be used when the number of relevant cases is small: "This method is most often required in the comparative analysis of national units or cultures..." Smelser provides as an example of an application of systematic comparative illustration Tocqueville's comparison of Americans and the English. Tocqueville argued that the conditions these two peoples share (e.g., their language) should not be used to explain their differences (Smelser 1976: 158). In an earlier work, Smelser (1973: 45-52) called this logical analysis of similarities and differences *the* comparative method and contrasted it with the statistical method. In his more recent *Comparative Methods in the Social Sciences*, however, Smelser argues that, broadly speaking, virtually all social scientific methods are comparative and that the method of systematic comparative illustration is inferior to the statistical method as a comparative method. It is inferior, according to Smelser, because it must be used when the number of relevant cases is small and the possibility of establishing systematic controls over the sources of variation in social phenomena is limited.

Above I defined comparative sociology in metatheoretical terms as the branch of sociology that uses society as its explanatory unit. Because comparative sociology uses society in this way, its explanations are often based on

6 To create a single index out of these three (hypothetical) interval scale variables would only increase the vagueness and generality of the explanation.

applications of "the method of systematic comparative illustrations" (Smelser 1976: 157). This method must be used because the number of societies is finite, and the number relevant to any particular general question is limited by both theoretical strictures and empirical constraints. This is not to say that the statistical method cannot or should not be applied to cross-societal data. It can be applied when there is a sufficient number of relevant cases and the method itself is appropriate to the particular research question. (Below, I discuss several problems associated with the application of the statistical method to cross-societal data.) More typically, however, the statistical method cannot be applied, and the investigator must use the method of systematic comparative illustration. Because the use of this method is a direct consequence of engaging in comparative sociology (i.e., attempting to explain social phenomena by citing cross-societal differences and similarities), I believe that it is appropriate to call this method *the* comparative method. (This designation is consistent with Smelser 1973.) I turn now to a discussion of the distinctive features of the comparative method.

The Comparative Method

"It is surprising, for all that has been said about the value of comparison, that a rigorous comparative methodology has not emerged. The reason for this lack may be the great difficulties that a rigorous comparative methodology would impose." (Porter 1970: 144). Smelser would argue that a rigorous comparative method is not possible because the comparative method is used only when the number of relevant cases is small. Consequently, the possibility of establishing control over the conditions and causes of social phenomena is diminished. While the number of cases relevant to a particular analysis certainly imposes constraints on rigor, in part it is the essentially *configurational* character of the comparative method that militates against this kind of rigor.

Typically, the explanations of comparative sociology do not cite single causes; they cite convergent causal conditions. A comparativist might argue, for example, that educational attainment and occupational mobility are positively associated with each other in a sample of U.S. residents *not* because the U.S. is a meritocratic society (a single cause), but because the U.S. is a modern, capitalist, industrial society (i.e., a convergence or coincidence of three causes). In essence, the comparativist would be arguing that a particular concurrence of three conditions (modern versus not modern, capitalist versus not capitalist, and industrial versus not industrial) explains why this association exists in a sample of U.S. residents. Furthermore, he/she would be arguing that wherever and whenever these three conditions coincide, a similar association should obtain. In essence, the argument would be that this particular *configuration* of conditions explains the observed association.

To evaluate this argument rigorously with the comparative method, it would be necessary to find instances of all the logically possible combinations

of the three conditions and then to assess the relationship between educational attainment and occupational mobility in each combination. If the expected relationship obtains only when the three conditions listed above coincide, and if all instances of such concurrence manifest the predicted relationship, then the general statement is supported. It would be difficult, of course, to achieve this kind of rigor because it would not be possible to obtain instances of all of the logically possible combinations of conditions. A completely rigorous application of the comparative method would require the identification of societies with eight different configurations of characteristics:

(1) societies that are modern, capitalist and industrial,
(2) societies that are not modern, but capitalist and industrial,
(3) societies that are modern and industrial but not capitalist,
(4) societies that are neither modern nor capitalist but industrial,
(5) societies that are modern and capitalist but not industrial,
(6) societies that are neither modern nor industrial but capitalist,
(7) societies that are modern but not capitalist and not industrial, and
(8) societies that are not modern, not capitalist and not industrial.

Some of these configurations have never existed and never will exist (e.g., number 4), and some of the configurations are historical (e.g., early nineteenth century England might qualify as an instance of number 2). Obviously, data on the relationship between educational attainment and occupational mobility for all configurations cannot be obtained. Consequently, it would be impossible to evaluate the claim that only a particular configuration of the three conditions produces the association between educational attainment and occupational mobility.

The example presented above illustrates several of the distinctive features of the comparative method. As already noted, the comparative method attends to configurations of conditions; it is used to ascertain the different configurations of conditions that are responsible for particular social phenomena. Also, the comparative method is a method of logical analysis; it is based on three of Mill's methods of inductive inquiry: the method of agreement, the method of difference and the indirect method of difference (Mill 1973; see also Gee 1950; Skocpol 1979: 36; Skocpol and Somers 1980). These methods use all available and pertinent data concerning the preconditions of a particular phenomenon to determine its causes by examining the similarities and differences between relevant instances. Because the comparative method is a logical method, it is a nonstatistical method. This means that (1) the comparative method does not work with samples or populations but with all relevant instances of the phenomenon of interest, and (2) the explanations that result from applications of the comparative method are not probabilistic explanations; rather, they are determinate explanations because every instance of a particular phenomenon is taken into account.[7] One consequence of (1) and (2) is that the comparative

7 This is not to say that the explanations that result from applications of the comparative

method is insensitive to the relative distribution of cases. For example, if there are many instances of a particular phenomenon and two configurations of preconditions that produce the phenomenon, both configurations are considered equally valid as explanations of the phenomenon regardless of the relative frequency of instances of each configuration. If one of the configurations was relatively infrequent, an application of the statistical method might obscure the existence of the less frequent configuration. The comparative method considers each configuration of conditions equally relevant since both result in the phenomenon of interest.

Smelser argues that the comparative method is inferior to the statistical method. Is it? The comparative method is superior to the statistical method in several important respects: (1) The statistical method is not configurational; each relevant condition is examined (typically) in an additive manner (i.e., the statistical method is *variable based*). Thus, for example, the statistical method can answer the question: What is the effect of type of economic system net of the effect of industrialization? But it is difficult to use this method to address questions concerning the consequences of different configurations of conditions (i.e., it is difficult to use the method in a *case based* manner). To investigate configurations, the user of the statistical method must examine statistical interactions. The examination of a large number of statistical interactions severely depletes degrees of freedom, especially in cross-societal research where the number of relevant cases is often small. The examination of configurations of seven preconditions, for example, would require a statistical analysis of the effects of over 100 different interaction terms.[8] (2) Applications of the comparative method produce explanations that account for every instance of a particular phenomenon. True, these explanations may contain descriptive accounts of the uniqueness of one or more deviating cases, but at least the comparative method highlights these irregularities and requires the investigator to propose explanations of them. This feature of the comparative method makes it especially well-suited for the task of building new theories and synthesizing existing theories. (3) The comparative method does not require that the investigator pretend that he/she has a sample of societies drawn from a particular population so that tests of statistical significance can be performed. The boundaries of a comparative examination are set by the investigator (see Walton 1973: 174-5); they are not coterminus with the boundaries of an arbitrarily defined or (more typically) undefined population of societies. Finally, (4) the comparative method forces the investigator to familiarize him/herself with the cases relevant to his/her analysis. To make detailed (configurational) com-

method are irrefutable. More than one determinate explanation of a given phenomenon is possible. If more than one is available, the simplest obviously would be the preferred explanation.

8 In multiple regression analyses of statistical interaction, it is often impossible to examine complex interactions. Such analyses are seriously impaired by the indecipherable mountain of multicollinearity created by the many product terms.

parisons, it is necessary for the investigator to examine each case directly and to contrast each case with all other relevant cases. The statistical method, by contrast, requires the investigator to focus only on relationships between variables (i.e., correlations) and not on the differences and similarities between cases.

In short, the comparative method is not a bastard cousin of the statistical method. It is qualitatively different from the statistical method, and it is uniquely suited to the kinds of questions comparativists ask.

The Comparative Method in the 1970s

Generally speaking, most comparative sociologists have not recognized the distinctiveness of the comparative method. There is a general awareness that the comparative method uses Mill's methods of logical induction (as opposed to quantitative methods of statistical induction), but there have been only a few efforts to improve on Mill's methods or to spell out their special uses in comparative sociology (e.g., Skocpol and Somers 1980). The one area where there has been progress, however, is in efforts to explicate the theoretical and metatheoretical bases of the comparative method.

An explicit metatheoretical bases for the comparative method exists in the writings of Max Weber. Weber never doubted the applicability of statistical methods to social data; he had serious doubts, however, concerning the usefulness of such applications. Weber favored instead the use of the comparative method in conjunction with ideal types. Essentially, ideal types are used to define relevant comparisons and to aid the conceptualization of the objects of comparison. The ideal type is a device that explicitly links substantive theory and empirical data.

Several developments in the last 15 years have significantly advanced sociologists' understanding of the usefulness of ideal types in comparative work. This enhanced understanding of ideal types will pave the way for more sophisticated applications of the comparative method in the years to come. Most important among these developments was the simple translation of the remainder of Weber's metatheoretical essays into English. *Roscher and Knies* and *Critique of Stammler*, translated by Guy Oakes, were both published in the 1970s; the essays contained in these volumes complement previously translated metatheoretical essays contained in *The Methodology of the Social Sciences* and in *Economy and Society*. The secondary literature on Weber's methods and his metatheory also experienced significant advances. Most important among these were *Scholarship and Partisanship* (Bendix and Roth 1971), *Max Weber and Sociology Today* (Stammer 1971), *Max Weber's Theory of Concept Formation* (Burger 1976), *Max Weber's Vision of History* (Roth and Schluchter 1979), and *Science, Values and Politics in Max Weber's Methodology* (Bruun 1972). Even though Smelser attempted to portray the comparative method as an inferior version of the statistical method, his treatment of Weber in *Comparative Methods in the Social*

Sciences must be included among the majors works in the secondary literature on Weber's methods. Smelser's work is especially valuable because he contrasts Weber's methods with Durkheim's. Unfortunately, Smelser exaggerates the similarities between Weber and Durkheim in his attempt to show the unity of social scientific methods (see Ragin and Zaret 1981). Again, the major point of this essay is that the comparative method has many distinctive features and that these distinctive features make it especially useful for comparative work.

There have been other works relevant to the comparative method and the use of type concepts. In *Social Change and History* Nisbet attacks the notion that societies can be viewed as systems that undergo processes of ontogenetic change and transformation.[9] Nisbet's views have been reproduced by Wallerstein in *The Modern World System* and in his essays (1979) and by Smith (1973) in *The Concept of Social Change*. Nisbet's position is relevant to the comparative method as I have presented it in this essay because it affirms (1) that it is erroneous to view societies as members of a single population of systems, and (2) that many of the important differences and similarities between societies are not manifestions of different systemic states; rather, they are manifestations of the consequences of unique large scale events and processes. In short, Nisbet's argument implies that to explain cross-societal similarities and differences it is necessary to take into account the historical experiences of societies. Type concepts are especially useful for this task, for they can be used to conceptualize commonalities across societies and at the same time to highlight the theoretically relevant differences between them. The usefulness of type concepts for comparative work (especially historical comparative work) was one of the major themes of Weber's metatheoretical essays. Several contemporary sociologists have echoed these methodological arguments and elaborated on them. Prominent among these are McKinney (1966) and Stinchcombe (1978).

While these many contributions to the development of the comparative method in sociology have significantly advanced the field of comparative sociology, far more attention has been devoted to the application of the statistical method to cross-societal data. I turn now to a brief discussion of these efforts.

Cross-Societal Research and the Statistical Method

The statistical method imposes several demands on the social scientific researcher. (1) The investigator must be able to define the population of observations relevant to his/her research question. (2) The investigator must be able to sample from the population of observations. (3) The observations must be

9 Implicit in Nisbet's view is an attack on the use of variables to characterize systemic states. The growth metaphor Nisbet criticizes suggests that societies are organisms that undergo relatively fixed and determined patterns of growth. The growth metaphor implies further that societies are comparable members of a single population. This position opens the door to the use of variables and systems type analyses, in general.

comparable instances of the phenomenon he/she is investigating. And (4) the observations must be independent of one another. The data used by social scientists rarely conform to these requirements. Consequently, a set of *de facto* minimum requirements has emerged, and in some areas of research these *de facto* requirements have replaced the formal requirements listed above. According to the *de facto* requirements, if a set of observations can be meaningfully categorized (e.g., voluntary associations in Toledo, Ohio in 1971) and if the number of such observations is sufficiently great to allow multivariate statistical analysis, then the statistical method can be applied to the observations. The statistical method itself favors no particular observational unit. If an investigator believes that his/her observational unit satisfies at least the minimum requirements listed above, then the method is applied.

In the interest of methodological sophistication, many comparative sociologists have applied the statistical method to cross-societal data (see, e.g., Merrit and Rokkan 1966; Taylor 1968; Dogan and Rokkan 1969; Gillespie and Nesrold 1971; Meyer and Hannan 1979). These investigators typically use the nation-state as the observational unit in their statistical analyses. As an observational unit the nation-state does not conform very neatly to the four formal requirements of the statistical method. The most serious violations are of requirements 3 and 4. Users of the statistical method rarely consider the degree to which their units are comparable. The tendency is to try to maximize the sample size; to exclude categories of countries for theoretical reasons of noncomparability would be to expend an already scarce commodity, cases. Unfortunately, this practice increases the generality of the terms used to describe the results of cross-national research. The Soviet Union and Upper Volta, for example, can be included in the same statistical analysis only if the results are described in very vague social-systemic terms. There has been extensive discussion of requirement number 4 (see Marsh 1967), but relatively little has been done about it. Users of the statistical method often fail to check to see if their cross-national correlations are the artifactual consequences of the fact that nation-states are not independent of one another. Two unrelated phenomena, for example, may be statistically associated with each other because of processes of diffusion (or patterns of dominance) or because of historically persistent patterns of intersocietal interaction (see Whiting 1968).[10] Such processes confound meaningful correlations and increase the case sensitivity of the results of quantitative cross-national research.

10 Curiously, no one has examined the links between this methodological argument (that observations must be independent) and dependency theory, a major theoretical perspective in the current study of economic development. The arguments of Whiting and others on the problem of independent observations suggest that economic dependency should increase (artificially) the similarity of the relevant societies. This suggests further that the most dependent societies should most resemble Western societies. This pattern would bias toward zero a valid negative relationship between economic dependency and economic development.

Requirement 1 is also violated, but in a less obvious manner. In many cross-national investigations it is possible to use theory to define a population of relevant nation-states, but investigators typically fail to do so. Because good cross-national data are scarce, investigators claim simply that they are interested in all nation-states, and in this way they maximize their number of observations. Sometimes, the theories used to guide statistical analyses do not suggest or define a relevant population of observations. Some cross-national tests of dependency theory, for example, include developed and underdeveloped countries in the statistical analysis (e.g., Delacroix 1977), while others include only underdeveloped countries (e.g., Chase-Dunn 1975). Requirement 2 is also more or less ignored because, again, there are so few nation-states with good data. To use only a *sample* of nation-states would severely reduce an already depleted data base. Comparativists who use the statistical method, therefore, claim that they study the universe (or population) of relevant observations and use all available data.

Various technical problems also plague the application of the statistical method to cross-national data. Generally, these technical problems result from the violations of the requirements of the statistical method listed above.

(1) Tests of statistical significance are not interpreted in the same way by all comparativists who use the statistical method. Some users argue that they study the entire population of nation-states and that, consequently, tests of statistical significance are meaningless. Others use tests of statistical significance in the same manner as those who study samples of populations of individuals. Still others claim that these tests can be used for theory testing purposes but not as devices for assessing the generalizability of a set of findings (given that the sample approximates the population).

(2) Often, missing data on certain categories of nation-states seriously distort the results of cross-national research. The claim that one is studying a set of nation-states representative of the entire population of nation-states can be supported only if all categories of nation-states are represented. Data are often missing, however, for the very poor nations, for Communist nations and for nations embroiled in external conflicts or immersed in internal struggles. The best data exist for developed capitalist countries and their ex-colonies and major trading partners.

(3) The data used in cross-national studies rarely meet the assumptions of the various statistical techniques used. Because of glaring cross-national inequalities, most measures relevant to the differences between societies are skewed in distribution. In regression models, the use of cross-national data typically produces heteroscedasticity, and the assumptions of OLS are violated. Generally, these data difficulties result from the very dissimilarity of nation-states. These difficulties suggest that nation-states are too dissimilar, that they are not sufficiently comparable, and that the formal requirements of the statistical method have been violated.

(4) One way to make nation-states more similar is to use ratio measures of their attributes (e.g., use GNP per capita instead of GNP). The use of ratio measures does not always solve the data problems mentioned above. GNP per capita, for example, is skewed in its cross-national distribution, and its use in regression models as a dependent variable often results in heteroscedasticity. Even if the use of ratio variables solves the data problems mentioned above, their use in regression models is discouraged by several authors (e.g., Schuessler 1974) for various reasons, the most serious of which is the fact that ratio measures compound problems associated with measurement error (Long 1980).

There are several additional technical problems associated with the use of the statistical method in comparative sociology. Most of these problems result from the use of nation-states as observational units. Because comparative sociology's chosen explanatory unit is the society, the temptation to apply the statistical method to observational units that approximate societies (i.e., nation-states) is great. This apparent simplification of the task of the comparativist, however, raises a host of new and troublesome issues and problems.

Conclusion: Comparative Sociology and Comparative Research

Comparative sociology is distinctive. It is distinctive because it uses a particular explanatory unit, society. This choice of explanatory unit is a metatheoretical act, and it has a profound effect on the practice of comparative sociology. Most significant in this regard is the simple fact that the number of societies available for comparative analysis is limited. This finite set can be categorized and characterized in many perfectly overlapping ways, and within this set relevant cases are sometimes so scarce that the number of explanations of a particular phenomenon exceeds the number of examples. These conditions favor the use of a nonstatistical method, the comparative method.

Attempts to apply the statistical method to comparative materials often result in violated assumptions. Even when these assumptions are ignored, the investigator is confronted with a host of technical problems. Furthermore, the statistical method is not well-suited for comparison because it is a variable-based method. By contrast, the comparative method, especially as I have portrayed it in this essay, is a case-based method. It is therefore ideally suited for the goals of comparative sociology, to catalogue and explain cross-societal similarities and differences.

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