Quantitative Strategies
Moving Beyond Qualitative and
The Comparative Method

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Acknowledgements
This book represents an effort to step back from traditional views of governance, according to the demands of a sustainable and a comprehensive framework. This is the foundation of the current social sciences, which are structured around questions of governance.

There is a long tradition in the social sciences of practicing the questions of governance, and their social context. A diverse and evolving set of questions about policy, strategy, and governance, which includes the influence of certain outcomes, how to measure and determine the variation in policies of political institutions. These variations have been shaped by cross-national and international differences. The way social scientists ask their questions, and the questions they ask, are shaped by the normative and multidisciplinary perspectives that are used to analyze these questions.

I refer to the discussions about power, authority, and social norms. The normative and multidisciplinary perspectives that are used to analyze these questions are shaped by the social scientists. The discussions about power, authority, and social norms are shaped by the social scientists.

The field of sociology is developing new theories and approaches for the analysis of social phenomena. The discussions about power, authority, and social norms are shaped by the social scientists.

Preface and Overview
tical techniques, in comparative social science especially, and to explore alternatives. In doing this, I am bucking the trend in mainstream social science toward the application of ever more sophisticated multivariate techniques to all types of social data. Fortunately, I am not alone in this endeavor, and like others engaged in similar or parallel struggles (see Duncan 1984, Lieberson 1985, Stinchcombe 1978, and Tilly 1984). I remain sympathetic with (and an avid user of) multivariate statistical techniques. The problem is not to show which methodology is best but to explore alternative ways of establishing a meaningful dialogue between ideas and evidence.

Initially, my only goal in this work was to present a preliminary formulation of a technique of data reduction that uses Boolean algebra to simplify complex data structures in a logical and holistic manner. I found, however, that it was very difficult to present the technique I had developed without also presenting a general discussion of strategies of comparative research. Not only is this discussion crucial as background material; it repeats, in a highly simplified form, the intellectual journey that led to the development of an algebraic technique of qualitative comparison. By itself, the technique is only a set of relatively simple algorithms. When considered in the context of problems in comparative research and social science methodology more generally, however, the logic of the qualitative comparative approach becomes clear.

Comparative social science is an ideal setting for addressing basic methodological issues. The essential characteristics of the qualitative/quantitative split in the social sciences are clearly visible in comparative social science. In contrast to other subdisciplines, this field has a long tradition of qualitative work that is stronger and richer than its quantitative counterpart. Not only is this tradition qualitative, but it also tends to be case-oriented (as opposed to variable-oriented) and historical (as opposed to abstractly causal). For these reasons the split between the two major research strategies is more complete and more profound in comparative social science than in most other subdisciplines.

The consequences of this division are unmistakable and unfortunate. Important research questions are often overlooked, or if asked they tend to be distorted. For example, there are several cross-national studies of aggregate social turmoil involving virtually all countries, and there are comparative case studies of the handful of countries that have experienced social revolutions, but the cross-national studies tend to be vague and abstract, and the studies of social revolution tend to treat each revolution separately and draw only a few general conclusions. The tendency is either to expand research questions so that they are broader and therefore relevant to many countries or to restrict investigation to a few significant cases. Interest in military coups in Africa, for example, might be expanded into a study of regime instability and encompass all Third World countries (or all countries), or it might be confined to an in-depth analysis of a manageable small number of major military coups.

The first approach, broadening the scope of a study, is attractive because it allows the use of the quantitative tools of mainstream social science. The problem with this practice, which I characterize as a variable-oriented approach, is that in the course of satisfying the demands of statistical techniques, the connection between the research, on the one hand, and the theoretical, substantive, and political concerns that motivate research in the first place, on the other, tends to be strained. Sometimes quantitative crossnational studies have an unreal quality to them—countries become organisms with systemic distress, for example—and the data examined have little meaningful connection to actual empirical processes. More concrete questions—relevant to the social bases and origins of specific phenomena in similarly situated countries and regions—do not receive the attention they deserve.

These questions usually are addressed only by researchers who study a few cases at a time. I refer to this second approach, which tends to be qualitative, as the case-oriented tradition. Case-oriented studies, by their nature, are sensitive to complexity and historical specificity. Thus, they are well suited for addressing empirically defined historical outcomes, and they are often used to generate new conceptual schemes, as well. Researchers who are oriented toward specific cases (area specialists especially) do not find it difficult to maintain a meaningful connection to social and political issues because they are more concerned with actual events, with human agency and process. It is difficult, however, to sustain attention to complexity across a large number of cases. Furthermore, case-oriented researchers are always open to the charge that their findings are specific to the few cases they examine, and when they do make broad comparisons and attempt to generalize, they often are accused of letting their favorite cases shape or at least color their generalizations.

While the case-oriented approach is limited in this way, it has many special features that are well worth preserving, even in studies that span many cases. First, case-oriented methods are holistic—they treat cases as whole
entities and not as collections of parts (or as collections of scores on variables). Thus, the relations between the parts of a whole are understood within the context of the whole, not within the context of general patterns of covariation between variables characterizing the members of a population of comparable units. Second, causation is understood conjuncturally. Outcomes are analyzed in terms of intersections of conditions, and it is usually assumed that any of several combinations of conditions might produce a certain outcome. These and other features of case-oriented methods make it possible for investigators to interpret cases historically and make statements about the origins of important qualitative changes in specific settings.

A primary goal of this book is to identify the unique strengths of case-oriented methods and to formalize them as a general method of qualitative comparison using Boolean algebra. The analytic strategy I present (which I call the qualitative comparative method) can be applied to a few cases or to hundreds. The principle guiding the formulation of this approach was that the essential features of case-oriented methods should be preserved as much as possible in the development of techniques for larger questions. This is important because mainstream statistical methods disaggregate cases into variables and distributions before analyzing them. This practice makes historical interpretive work very difficult, if not impossible. In short, my goal was to formalize qualitative comparative methods without departing from the general logic of case-oriented research. The formalization I present is based on Boolean algebra, the algebra of logic and set theory.

In many respects, the analytic strategy I discuss provides an alternative to multivariate statistical analysis. Unlike multivariate statistical analysis, which tends to be radically analytic (because it breaks cases into parts—variables—that are difficult to reassemble into wholes), qualitative comparison allows examination of constellations, configurations, and conjectures. It is especially well suited for addressing questions about outcomes resulting from multiple and conjunctural causes—where different conditions combine in different and sometimes contradictory ways to produce the same or similar outcomes. Multivariate statistical techniques start with simplifying assumptions about causes and their interrelation as variables. The method of qualitative comparison, by contrast, starts by assuming maximum causal complexity and then mounts an assault on that complexity.

While the techniques I present could be considered alternatives to multivariate statistical analysis, they do not supersede traditional statistical methods. In fact, experience may show that they can be used to greatest advantage in conjunction with them. An important part of research is the dialogue that develops between the investigator’s theory and the data. Generally, the character of this dialogue is shaped by the techniques of data analysis used by the investigator. While this dialogue occurs in all types of social scientific research, in comparative social science, especially in the branch I call case-oriented, it is particularly rich and elaborate. The techniques of qualitative comparison that I introduce bring some of this richness to studies involving more than a handful of cases. In other words, they overcome some of the limitations of multivariate statistical techniques as a basis for carrying on this dialogue. Thus, use of these techniques may be viewed as a possible corrective to the radically analytic tendencies of most statistical techniques.

This work addresses specific methodological issues in comparative social science, issues I have worked on over the last several years. However, the methodological problems I address and the tentative solutions I offer are not in any way restricted to the fields of comparative sociology and political science, where I draw most of my examples. I discuss two research traditions in comparative social science. One traditionally has been viewed as qualitative, the other as quantitative. This division occurs again and again in virtually every social scientific field: it is certainly not restricted to comparative work. Essentially, I address metatheoretical differences between approaches generally called qualitative (or case-oriented) and quantitative (or variable-oriented)—primarily in terms of their different orientations toward the analysis and interpretation of data. Less attention is paid in this work to the production of so-called raw data, an integral part of the research process.

AN IMPORTANT CAVEAT

The Boolean approach developed in this work touches the world of statistical analysis of social data in several ways. It examines cases; it uses categorical variables; it looks at different combinations of conditions (that is, cells of a multivariate cross-tabulation); it can be applied to categorical dependent variables; and it involves data reduction. Thus, it should not be surprising that I have encountered strong pressure to build a bridge between the Boolean approach and statistical methods designed for these kinds of data and problems (such as log-linear methods) in order to show how the two approaches can be usefully integrated.

This bridge can be made under certain conditions (for example, availability of a very large number of observations), but this book is not the place
for it. If I were to present that bridge in this work, many readers would conclude that the case-oriented approach is simply a watered-down version of log-linear statistical methodology. It is essential, however, to acknowledge and comprehend the unique features of the case-oriented approach. One of my primary goals is to broaden the boundaries of methodological discussion by formalizing the differences between case-oriented and variable-oriented research in comparative social science and other subdisciplines as well.

Some sections of the work may be read defensively by those who use statistical methods regularly, and technical solutions to some of the problems I discuss will immediately come to mind. My primary point in these discussions is not to argue that these problems cannot be solved by statistical methods but to show that by their nature statistical methods tend to discourage awareness of these problems. I am not concerned that the use of statistical techniques requires assumptions, for example, but I am troubled by the tendency for these assumptions to become hidden from the user's view and to distort the dialogue between ideas and evidence.

WHAT Follows

Chapter 1 discusses the distinctive features of comparative social science, especially its case-oriented tradition, that make it an ideal setting for examining basic methodological issues. Prominent among these features are its qualitative orientation and its related interest in (and appreciation of) complexity, its emphasis on interpretive questions and specific historical outcomes and processes, its limited data base (many questions are relevant to only a small number of countries or regions), and its special methodological treatment of aggregate units such as nation-states. For these and related reasons, the consequences of methodological decisions are more apparent in comparative research than in other areas.

A hallmark of qualitative approaches is their attention to complexity—the heterogeneity and particularity of individual cases. Chapter 2 addresses the problem of complexity through a discussion of multiple conjunctural causation and the special methodological problems this type of causation presents. When several different combinations of conditions produce the same outcome (a common finding in comparative studies), it is very difficult to unravel the different patterns across a range of cases. Analysis is further complicated by the limited diversity of naturally occurring social phenomena. (In a laboratory it is possible to manufacture all possible combinations of causes and thereby disentangle the decisive causal conjunctures.) Chapter 2 outlines this basic problem in order to set the stage for discussing the two dominant ways of simplifying complexity—by examining similarities and differences among a limited number of cases (the case-oriented strategy) and by looking at relations between variables (the variable-oriented strategy).

The first major strategy, the case-oriented approach, is the focus of Chapter 3. A common goal in this type of analysis is to interpret a common historical outcome or process across a limited range of cases, usually only a handful. Cases are examined as wholes, which means that the causal significance of an event or structure depends on the context (that is, on other features of the case). This strategy highlights complexity, diversity, and uniqueness, and it provides a powerful basis for interpreting cases historically. However, it is very difficult to use this approach to examine more than a few cases at a time. Faced with a large number of cases, the investigator is forced to make many paired comparisons—too many to grasp all at once—and the analysis may disintegrate into descriptive statements lacking any generality. Thus, while the case-oriented approach avoids many of the simplifying assumptions of the variable-oriented approach, it cannot be used to address similarities and differences among many cases.

The variable-oriented approach, the focus of Chapter 4, is the dominant research strategy of mainstream social science. In this approach, cases are disaggregated into variables and distributions. Examination of patterns of covariation among variables is used as a basis for making general statements about relations between aspects of a case considered collectively as populations of comparable observations. These general statements typically are linked to abstract theoretical ideas about generic properties of macrosocial units (such as societies). Because this strategy starts with simplifying assumptions, it is a powerful data reducer. Thus, it is an ideal instrument for producing broad statements pertaining to relatively large bodies of data encompassing diverse cases. However, the simplifying assumptions that make this approach possible often violate commonsense notions of causation and sometimes pose serious obstacles to making interpretive statements about specific cases or even about categories of cases.

A conceivable resolution of the gulf between case-oriented and variable-oriented research is to combine the two strategies in some way. In fact, many investigators have attempted to do this with moderate success. Chapter 5 analyzes three such attempts: Jeffrey Paige's *Agrarian Revolution*, John Stephens's *The Transition from Capitalism to Socialism*, and Edward Shorter...
and Charles Tilly's *Strikes in France*. These three studies have many laudable features, but their respective research strategies do not fully transcend the quantitative/qualitative split in comparative social science. Even though all three combine variable-oriented and case-oriented methods, each tends to be dominated by one strategy. Paige's study and Stephens's study are primarily variable-oriented approaches buttressed with independent case studies, while Shorter and Tilly's work is primarily a case study that uses quantitative analysis to support their broad historical interpretation of that case.

The discussion of combined strategies provides a basis for outlining the essential features of a more synthetic approach to comparative research. Basically, a synthetic strategy must be able to address more than a handful of cases and, at the same time, avoid making the simplifying assumptions about cause which are characteristic of the variable-oriented approach. It is essential to avoid certain simplifying assumptions because they interfere with the goal of historical interpretation. It is difficult to make statements about the origins of important historical outcomes, for example, if the model of causation implicit in the analytic technique contradicts theoretical and substantive understanding of the phenomenon in question. A synthetic, broadly comparative strategy must be both holistic—so that the cases themselves are not lost in the research process—and analytic—so that more than a few cases can be comprehended and modest generalization is possible.

An algebraic basis for a synthetic approach exists in Boolean algebra, the algebra of sets and logic. Chapter 6 presents the basic features of Boolean algebra (the Boolean number system, Boolean addition and multiplication, and set theory) and then introduces rudimentary principles of Boolean algebra used to logically minimize (reduce the complexity of) truth tables. The process of minimizing truth tables has a direct link to the problem of data reduction in variable-oriented research (a truth table bears some similarity to a data matrix), but the mechanics are entirely different. Chapter 6 details these differences. No background in Boolean algebra is assumed, and the notational system is simple.

The material presented in Chapter 7 builds on the previous chapter to introduce advanced methods of Boolean analysis. Two in particular are emphasized. The first addresses the limited diversity of social phenomena (that is, the fact that macrosocial phenomena cannot be manipulated experimentally). With Boolean techniques it is possible to construct a model of the diversity that exists among comparable outcomes and then to study the causes of these outcomes within the context of the “available” diversity. In other words, an integral part of the research process itself can involve direct attention to, and consideration of, the limitations of naturally occurring social phenomena. A second procedure concerns the use of set theory to contrast empirical configurations with theoretically constructed models. Essentially, this method makes it possible both to evaluate theories and to use them as a basis for historical interpretation. The major objective here is to show that Boolean methods are not mechanical techniques but can be integrated into the dialogue of ideas and evidence in social research.

Chapter 8 presents a variety of examples of Boolean-based qualitative analysis. The major example is an analysis of ethnic political mobilization among territorially based linguistic minorities in Western Europe. Others include an analysis of characteristics of juvenile courts and a reanalysis of data used by Stein Rokkan in presenting his configurational approach in comparative political sociology. Chapter 8 offers a range of examples to demonstrate the general utility of Boolean techniques of qualitative comparison. The examples are only preliminary because the larger argument emphasizes the role of qualitative comparative methods in the dialogue of ideas and evidence in social research, especially in comparative work that is both historically interpretive and causal-analytic. While it is impossible to reproduce an entire research dialogue in a brief illustration of method, I hope to convey the general flavor of this dialogue in the variety of examples presented.

Chapter 9 concludes the book by summarizing the major arguments and then emphasizing the strengths of Boolean techniques of qualitative comparison. It also discusses the impact of the application of Boolean techniques on the entire research process.
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This book is dedicated to my wife, Ann, who has shared with me the challenge of turning my disorderly thoughts into an intelligible statement. The completion of this work is testimony to her patience, her understanding, and her insight.
The Distinctiveness of Comparative Social Science

"Thinking without comparison is unthinkable. And, in the absence of comparison, so is all scientific thought and scientific research" (Swanson 1971:145). Most social scientists today would agree with this observation, although some might be tempted to substitute the phrase variables and relationships for the word comparison. Virtually all empirical social research involves comparison of some sort. Researchers compare cases to each other; they use statistical methods to construct (and adjust) quantitative comparisons; they compare cases to theoretically derived pure cases; and they compare cases' values on relevant variables to average values in order to assess covariation. Comparison provides a basis for making statements about empirical regularities and for evaluating and interpreting cases relative to substantive and theoretical criteria. In this broad sense, comparison is central to empirical social science as it is practiced today. Lieberson (1985:44) states simply that social research, "in one form or other, is comparative research."

While virtually all social scientific methods are comparative in this broad sense, in social science the term comparative method typically is used in a narrow sense to refer to a specific kind of comparison—the comparison of large macrosocial units. In fact, the comparative method traditionally has been treated as the core method of comparative social science, the branch of social science concerned with cross-societal differences and similarities (Easthope 1974). Despite this tradition, there is substantial disagreement today concerning the distinctiveness of comparative social science in general
and the comparative method in particular. Several comparativists have objected to the idea that comparative social science is distinctive in any important respects from social science in general (Grimshaw 1973: 18).

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 problem unique to itself." According to Smelser (1976: 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 variation. (See also Armer 1973: 50.) Any technique that furthers the goal of explaining variation, according to this reasoning, is a comparative method. This includes virtually all analytic methods used by social scientists (see Bailey 1982).

This position, that there is nothing truly distinctive about comparative social science and that virtually all social scientific methods are comparative methods, is sound, and it is attractive because it suggests that social science subdisciplines are united by their methods. The argument is favored by many comparativists, in fact, because the emphasis on continuities between comparative and noncomparative work supports the idea that comparative social science is as scientific as its siblings. This position overlooks the fact, however, that there are important differences between the orientations of most comparativists and most noncomparativists and these differences have important methodological consequences. While it is true that the logic of social science is continuous from one subdiscipline to another, the peculiarities of comparative social science make it an ideal setting for an examination of key issues in methodology. In fact, I argue that a lot can be gained from exaggerating the distinctive aspects of comparative work and that these lessons can be applied to other social science subdisciplines as well.

The most distinctive aspect of comparative social science is the wide gulf between qualitative and quantitative work. It is wider in comparative social science than in perhaps any other social science subdiscipline. In part this is because its qualitative tradition is dominant, the opposite of the situation in most other fields. Over the last twenty years, some of the most celebrated works in the social sciences (from Moore's Social Origins of Dictatorship and Democracy to Wallerstein's Modern World System) have come out of this tradition, making it appear continuous with the grand theorizing of such classical scholars as Durkheim and Weber.

More fundamental to the gulf, however, is the fact that several other divisions coincide with the qualitative/quantitative split in comparative social science and reinforce it. Qualitative researchers tend to look at cases as wholes, and they compare whole cases with each other. While cases may be analyzed in terms of variables (for example, the presence or absence of a certain institution might be an important variable), cases are viewed as configurations—as combinations of characteristics. Comparison in the qualitative tradition thus involves comparing configurations. This holism contradicts the radically analytic approach of most quantitative work.

Not only is the qualitative tradition oriented toward cases as wholes, as configurations, but it also tends to be historically interpretive. The term interpretive is used in a restricted sense here. Often, the term is used to describe a type of social science that is only remotely empirical and concerned primarily with problems of meaning or hermeneutics. In this book, interpretive work is treated as a type of empirical social science: historically oriented interpretive work attempts to account for specific historical outcomes or sets of comparable outcomes or processes chosen for study because of their significance for current institutional arrangements or for social life in general. Typically, such work seeks to make sense out of different cases by piecing evidence together in a manner sensitive to chronology and by offering limited historical generalizations that are both objectively possible and cognizant of enabling conditions and limiting means—of context. This definition of interpretive work leans heavily on Weber (1949, 1975, 1977) but makes more allowance for the possibility of historical generalization based on examination of comparable cases. In this chapter I discuss these distinctive characteristics and sketch the implications of these features for comparative methodology. I begin by delineating the field.

THE BOUNDARIES AND GOALS OF COMPARATIVE SOCIAL SCIENCE

There have been several attempts to delineate the boundaries of comparative social science. Yet, there is still little agreement today concerning its domain. Most attempts to delineate the field have emphasized its special data or its special types of data. For reasons detailed below, this is a poor starting point. I argue that comparative social science is better defined by its distinctive goals.

It is common to define comparative research as research that uses compa-
rable data from at least two societies. This definition emphasizes the fact that the data of comparative social science are cross-societal. (See Andreki 1965: 66; Armer 1973: 49.) While this is an acceptable working definition of comparative social science, most comparativists would find this definition too restrictive. It excludes, for example, comparatively oriented case studies. Tocqueville’s *Democracy in America* is excluded, as is Durkheim’s *Elementary Forms of the Religious Life*. Many area specialists are thoroughly comparative because they implicitly compare their chosen case to their own country or to an imaginary but theoretically decisive ideal-type case. Thus, to define comparative social science in terms of its special data is a misleadingly concrete way to delineate its boundaries.

Others have attempted to differentiate comparative social science by emphasizing its multilevel character (as in Rokkan 1966: 19–20). According to Przeworski and Teune (1970: 50–51), comparative work proceeds at two levels simultaneously—at the level of systems (or macrosocial level) and at the within-system level. According to their argument, any analysis that is based only on macrosocial 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 (such as GNP per capita) to explain variation in a dependent variable based on aggregations of individual-level data within each system (such as literacy rates), the study would not qualify as a comparative study according to Przeworski and Teune. Ideally, system-level variables should be used to explain variation 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 among countries in within-system relationships (the strength of the relationship between social class and party support). Walton’s (1984) study of national revolts in the Third World also conforms to this definition of comparative work. He uses degree of incorporation into the world economy, a system-level variable, to account for variation in the degree to which popular protests and state reactions to protest contributed to the coalescence of revolutionary situations in six countries (see especially Walton 1984: 188–197). Few studies traditionally thought of as comparative, however, conform to these strictures. 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.) Przeworski and Teune’s definition of comparative inquiry as multilevel research is much more restrictive than even the first definition considered here.

Both definitions are inadequate. Yet they suggest a tentative solution to the problem of delineating comparative work. One level that invariably plays a big part in definitions of comparative work is the macrosocial level. It appears in the first definition offered above in its emphasis on data from two societies and in the second’s emphasis on multilevel analyses, with one level the macrosocial. The boundaries of comparative social science, therefore, must be conterminous with a specific usage of macrosocial units.

It is not as a data category that macrosocial units are important to comparativists, but as a metatheoretical category. What distinguishes comparative social science is its use of attributes of macrosocial units in explanatory statements. This special usage is intimately linked to the twin goals of comparative social science—both to explain and to interpret macrosocial variation.

The importance of macrosocial units to explanation in comparative social science is best understood by example. Consider an investigation which concludes that a strong relationship between social class and party preference exists in Great Britain because “Great Britain is an industrial society.” This conclusion concretizes the term society by providing an example (Great Britain) and by implying that there are other societies, some of which are industrial and some of which are not. If the investigator had concluded instead that the relationship exists because “citizens vote their pocketbooks” or because “the relations of production shape political consciousness,” then he or she would have avoided concretizing any macrosocial unit and thereby would have avoided engaging in comparative social science.

This direct, empirical implementation of abstract, macrosocial units is a metatheoretical act, and it separates comparativists from noncomparativists. In order to compare societies or any other macrosocial unit, the comparativist must identify them by name. The comparativist thus assumes, at least implicitly, that macrosocial units are real and then defines them, sometimes by default, in the course of research. The fact that the difference between comparativists and noncomparativists is a metatheoretical difference based on the special goals of comparative social science has been obscured by the tendency of all social scientists to claim that they study societies or that social science is the study of society. For the noncomparativists, however, macrosocial units tend to remain abstractions. Noncomparativists can assure
themselves that the patterns and processes they study exist in a society; the concept need not be operationalized explicitly. For the comparativists, however, macrosocial units impinge on their work in a fundamental manner.

Rarely are these large, encompassing units defined. (Parsons 1977 and Marsh 1967 are exceptions.) In his discussion of the distinctiveness of comparative work, for example, Grimshaw (1973: 4) states, “I will defer discussion of what constitutes a [macrosocial] system.” This reluctance 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 macrosocial units; they must be operationalized in the course of comparative work.

At a very general level, comparativists are interested in identifying the similarities and differences among macrosocial units. This knowledge provides the key to understanding, explaining, and interpreting diverse historical outcomes and processes and their significance for current institutional arrangements. Cross-societal similarities and differences for many social scientists constitute the most significant feature of the social landscape; and, consequently, these researchers have an unmistakable preference for explanations that cite macrosocial phenomena. This tendency is reinforced by the fact that the goals of comparative social scientists typically extend beyond an interest in simply cataloging and explaining cross-societal similarities and differences. Most comparativists, especially those who are qualitatively oriented, also seek to interpret specific experiences and trajectories of specific countries (or categories of countries). That is, they are interested in the cases themselves, their different historical experiences in particular, not simply in relations between variables characterizing broad categories of cases. This interest reinforces the tendency to use macrosocial attributes in explanatory statements.

The decision to study macrosocial variation and to use explanatory statements citing macrosocial properties is, of course, a conscious choice, shaped in large part by the enduring reality of countries, nations, states, and other large (and imposing) political entities. As long as social scientists continue to be influenced by their social and historical contexts and continue to try to interpret them, they will use macrosocial attributes in their explanations of social phenomena. It is possible to imagine a social science devoid of explanatory statements citing macrosocial phenomena. A totally psychologized social science, for example, might attempt to disavow such explanations. It is unlikely, however, that social scientists will lose interest in interpreting national and international events and processes and thereby divorce themselves from significant features of their social contexts. (In any event, to do so would be to deny the social origins and bases of social science.) Thus, macrosocial units are central to the practice of comparative social science because they are an essential ingredient of the explanations comparativists offer.

A NOTE OF CAUTION ON UNITS OF ANALYSIS

It would be wrong at this point to conclude simply that comparativists differ from noncomparativists in their “chosen unit of analysis.” The example supplied previously suggests that any data unit can be used in comparative research. All that matters is how the results of research are understood. The fact that the explanations of comparative social science tend to be cross-societal and cite macrosocial phenomena, however, implies that the question of units is relevant.

Very little continuity exists, however, in 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 economic dependency and economic development, for example, an investigator might state that the unit of analysis is the nation-state because the data are 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 (1966), states that Moore’s unit of analysis is “class.” Wallerstein (1974, 1979, 1980, 1984) argues in various works that there is only one valid unit of analysis in comparative social science: the “world system.” Upon closer examination, however, one finds that Moore’s cases are different countries and Wallerstein’s discussion of the modern world system is rife with references to nation-states and comparisons of, for example, core countries and peripheral countries.

The fact that the term unit of analysis has been used in reference to both data categories and theoretical categories has created a great deal of confusion in the field of comparative social science. 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, for
example, 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 economy as a whole. (See, for example, Bergesen 1980 and McGowan 1985.) 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 explanatory unit, not the only valid data unit.

This tension between the two meanings of unit of analysis has bedeviled the comparative social science literature at least since the early 1960s. Issues associated with the aggregation problem have compounded the terminological difficulties and confusion. Allardt (1966: 339–341), 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 attempt to formulate a methodological position, Hopkins and Wallerstein (1970: 183) contrasted “research sites” and “theoretical units.” Several researchers attempted to clarify the situation by limiting their comments to “units of comparison” (Eisenstadt 1966: 86; Ezioni and Dubow 1970: 7; Czudnowski 1976: 27). Finally, Przeworski and Teune (1970: 8, 49–50) attempted to distinguish between “levels of observation” and “levels of analysis.”

Most of these discussions were stimulated by the ambiguity associated with the term unit of analysis. For most noncomparative social scientists, the term presents no special problems. Their analyses and their explanations typically proceed at one level, the individual or organizational level. This is rarely the case in comparative social science, where the analysis often proceeds at one level (perhaps the individual level, as in the preceding example) and the explanation is couched at another level (usually the macro-social level). Of course, this duality exists in other types of social science, and the methodological issues raised here apply to these areas as well. The duality is most pronounced, however, in comparative social science, which is one of the features that makes it an ideal arena for methodological discussion.

To clarify the unit of analysis question in comparative social science, it is necessary to distinguish between observational units and explanatory units. This distinction follows my discussion 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 case of the example mentioned above, the observational unit is the individual (the relationship is based on individual-level data) and the explanatory unit is societal.

METHODOLOGICAL CONSEQUENCES

The explanation that there is a strong relationship between social class and party preference in a sample of British voters because “Great Britain is an industrial society” implies that societies can be identified, that they can be classified as either industrial or not industrial, and that in industrial societies there is a strong relationship between social class and party preference, while in nonindustrial societies there is no such relationship. Because societies are (at least apparently) identifiable, an investigator conceivably could draw up a list of them, classify them as industrial and not industrial (or at least measure the degree to which each society is industrial), and then examine the degree to which the more industrial societies agree in manifesting a consistent relationship between social class and party choice and also the degree to which the less industrial societies agree in manifesting a weaker relationship. If these two patterns of agreement can be established, then the general statement (that in industrial societies there is a strong relationship between social class and party preference) used to explain the particular instance (the relationship observed in Great Britain) is supported.

Unfortunately, social scientific investigation is rarely this simple. 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. This concern for comparability derives ultimately from the fact that the cases (say, countries) which comparativists study have known histories and identities. They are not anonymous, disembodied observations. In the preceding investigation, for instance, a researcher familiar with the relevant cases might have doubts about the cross-societal comparability of measures of class positions or about the identification of parties with social classes. An investigator might also have doubts about the classification of societies as industrial and not industrial or about ordinal and interval measures of degree of industrialization. These measurement problems are very important, and they have ab-
sorbed the attention of comparative social scientists for some time. In fact, many discussions of comparative methods have concerned these issues almost exclusively.

At a more basic level, it is difficult to evaluate explanatory statements of comparative social science because the number of relevant units available for such assessments is often limited by empirical constraints. Even the investigator who claims that he or she is interested in all societies, and defines societies as all contemporary nation-states, encounters serious statistical problems if a quantitative analysis of these cases is attempted. A seemingly large set of more than one hundred nation-states can be reduced by half if there are problems with missing data. Often, the remaining cases are not representative of the original hundred-plus nation-states, much less of all societies (or all macrosocial systems). This problem is apparent in the hypothetical research described above. There are many societies, both industrial and nonindustrial, that are not democratic. Thus, any attempt to assess the strength of the relationship between social class and party preference in these countries would be questionable, if not misguided. Furthermore, the definition of democratic society is problematic and ideologically charged.

Theoretical strictures also may reduce the number of relevant cases. In the hypothetical analysis of more and less industrial societies discussed above, for example, it is possible that the general statement (that social class shapes party preference only in industrial societies) is theoretically meaningful only when applied to democratic countries with a feudal past. If this were the case, then the investigator would first draw up a list of democracies with a feudal past and then distinguish between more and less industrial countries within this set. Generally speaking, the greater the theoretical or empirical specificity, the smaller the number of cases relevant to the investigation. The smaller the number of relevant cases, the greater the likelihood that the investigator will find it difficult to evaluate an explanatory statement in a way that conforms to the standards of mainstream social science, especially its quantitative branch.

Sometimes there are more explanations of a certain phenomenon than there are examples of it because these strictures reduce the number of relevant cases to a mere handful. In such investigations it is impossible to adjudicate among 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 far exceed the number of cases. From the perspective of main-
easily with quantitative cross-national techniques. Yet these and related topics demand the attention of comparative social scientists. The fact that there are few relevant instances of each phenomenon and that these instances have known identities and histories (that is, known particularity) has a powerful impact on the character of the research process.

ENTER THE COMPARATIVE METHOD

As the number of relevant observations decreases, the possibility of subjecting arguments to rigorous statistical testing 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 more sophisticated statistical methods) 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 one example of the method of systematic comparative illustration Toqueville’s three-way comparison of American, French, and English customs. Toqueville argued simply that the conditions these collectivities share (such as language in the case of the English and the Americans) could not be used to explain their differences and that differences could not be used to explain similarities (Smelser 1976:158). In general, the technique of systematic comparative illustration involves applications of Mill’s (1843) method of agreement and his indirect method of difference. (These case-oriented techniques are discussed in detail in Chapter 3.)

In an earlier work, Smelser (1973) called this systematic 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 (1976), 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 control over the sources of variation in social phenomena is reduced. The possibilities for social scientific generalization are reduced.

In fact, the method that Smelser calls “the method of systematic comparative illustration” is what social scientists traditionally have called the comparative method. It forms the core of the case-oriented strategy and is quite different from correlational methods which form the core of the variable-oriented strategy (see Chapters 3 and 4). It is proper to call this method the comparative method because it follows directly from asking questions about empirically defined, historically concrete, large-scale social entities and processes—the kinds of questions that comparative social scientists tend to ask. Questions that necessarily lead to detailed analyses of relatively small numbers of cases are asked in other types of social science, as well, but this type of investigation is most common in comparative social science.

Once it is admitted that the comparative method derives its distinctiveness from the special goals of comparative social science and that it is most often a direct consequence of engaging in this enterprise, the special features of the comparative method can be delineated.

THE LOGIC OF 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 might argue that a rigorous comparative method is a contradiction in terms because, by definition, the comparative method is used only when the number of relevant cases is too small to allow the investigator to establish statistical control over the conditions and causes of variation in social phenomena. While the number of cases relevant to an analysis certainly imposes constraints on rigor, often it is the combinatorial nature of the explanations of comparative social science and the holistic character of the comparative method that militate against this kind of rigor.

Most comparativists, especially those who are qualitatively oriented, are interested in specific historical sequences or outcomes and their causes across a set of similar cases. Historical outcomes often require complex, combinatorial explanations, and such explanations are very difficult to prove in a manner consistent with the norms of mainstream quantitative social science. When causal arguments are combinatorial, it is not the number of cases but their limited variety that imposes constraints on rigor.

When qualitatively oriented comparativists compare, they study how different conditions or causes fit together in one setting and contrast that with how they fit together in another setting (or with how they might fit together in some ideal-typical setting). That is, they tend to analyze each observational entity as an interpretable combination of parts—as a whole. Thus, the ex-
plannations of comparative social science typically cite convergent causal conditions, causes that fit together or combine in a certain manner.

A simple example illustrates this practice. A comparatist might argue that social class and party preference are strongly related to each other in a sample of British voters not simply because Great Britain is an industrial society but also because it has a long history of class mobilization and conflict which coincided with the development of its current political system. In effect, this explanation cites three convergent conditions: (1) a history of class struggle (2) coinciding with political maturation (3) in a country that has been industrialized for a long time. It is their combined effect that explains the enduring individual-level relationship between social class and party preference. The argument would be that this configuration of causes explains the observed association.

To evaluate this argument rigorously, it would be necessary to find instances (among democratic countries) of all the logically possible combinations of the three conditions and then to assess the relationship between social class and party preference in each combination. Each logically possible combination should be examined because the argument is that it is the coincidence of these three conditions that explains the association. If this expected relationship is obtained only when these three conditions coincide, and if all instances of such concurrence manifest the predicted relationship, then the general statement would be supported.

It would be difficult to evaluate this argument because instances of all logically possible combinations of conditions are not available. A completely rigorous assessment would require the identification of democratic countries with eight different combinations of characteristics. (There are eight different logically possible combinations of three dichotomies.) Each different combination is conceived as a different situation, a different totality, not simply as a different collection of values on three variables. Some of these combinations, however, while logically possible, do not exist. At best, the investigator would be able to examine the combinations that do exist and assess the relationship between class and party within each of these configurations.

While this simple example shows the limitations placed on the comparative method as a consequence of its holistic nature, it also illustrates key features of the method. As already noted, the comparative method attends to configurations of conditions; it is used to determine the different combinations of conditions associated with specific outcomes or processes. Moreover, the comparative method is based on "logical methods" (see Gee 1950); it uses two of Mills's method of inductive inquiry: the method of agreement and the indirect method of difference (Mills 1943; see also Skocpol 1979; Skocpol and Somers 1980; Zelditch 1971; Ragni and Zaret 1983). These methods use all available and pertinent data concerning the preconditions of a specific outcome and, by examining the similarities and differences among relevant instances, elucidate its causes.

Because the comparative method has this character, statistical criteria are less important to this approach. This means that the comparative method does not work with samples or populations but with all relevant instances of the phenomenon of interest and, further, that the explanations which result from applications of the comparative method are not conceived in probabilistic terms because every instance of a phenomenon is examined and accounted for at possible. Consequently, the comparative method is relatively insensitive to the relative frequency of different types of cases. For example, if there are many instances of a certain phenomenon and two combinations of conditions that produce it, both combinations are considered equally valid accounts of the phenomenon regardless of their relative frequency. If one is relatively infrequent, an application of the statistical method to this same set of data might obscure its existence. The comparative method would consider both configurations of conditions relevant since both result in the phenomenon of interest.

Simmel's argument implies 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. First, the statistical method is not combinatorial; each relevant condition typically is examined in a piecemeal manner. Thus, for example, the statistical method can answer the question: what is the effect of having a history of class struggle net of the effect of industrialization? But it is difficult to use this method to address questions concerning the consequences of different combinations of conditions (that is, to investigate situations as wholes). To investigate combinations of conditions, the user of the statistical method must examine statistical interactions.
Second, applications of the comparative method produce explanations that account for every instance of a certain phenomenon. True, these explanations may contain interpretive accounts of the particularity of one or more deviating cases, but at least the comparative method automatically highlights these irregularities and requires the investigator to propose explanations of them. This concern makes the comparative method more consistent with the goal of interpreting specific cases and addressing historical specificity. The feature of the comparative method also makes it especially well suited for the task of building new theories and synthesizing existing theories.

Third, the comparative method does not require the investigator to pretend that he or she has a sample of societies drawn from a particular population so that tests of statistical significance can be used. The boundaries of a comparative examination are set by the investigator (see Walton 1975: 174–175); they are not coterminous with the boundaries of an arbitrary-defined or (more typically) undefined population of societies or points in time or events in societies.

Finally, the comparative method forces the investigator to become familiar with the cases relevant to the analysis. To make meaningful comparisons of cases as wholes, the investigator must examine each case directly and compare each case with all other relevant cases. The statistical method, in contrast, requires the investigator only to disaggregate cases into variables and then to examine relationships among variables, not to conduct a direct examination of the differences and similarities among cases considered as configurations of characteristics (that is, as meaningful wholes).

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 that many comparativists ask.

THE QUALITATIVE/QUANTITATIVE SPLIT IN COMPARATIVE SOCIAL SCIENCE

As outlined here, the comparative method is essentially a case-oriented strategy of comparative research (see Chapter 3). The focus is on comparing cases, and cases are examined as wholes—as combinations of characteristics (Ragin and Zaret 1983). This orientation distinguishes it from mainstream statistical methodology. Of course, not all social scientists who call themselves comparativists use the comparative method as presented in this chapter. Many use a variable-oriented strategy which conforms to the methodological norms of mainstream social science with its emphasis on variables and their interrelationships. The usual goal of variable-oriented investigations is to produce generalizations about relationships among variables, not to understand or interpret specific historical outcomes in a small number of cases or in an empirically defined set of cases (see Chapter 4). Combined strategies also exist, but close examination usually shows that studies using combined strategies tend to fall into one of the two camps (see Chapter 5).

Examples of combined strategies include variable-oriented analyses supplemented with case studies (as in Paige 1975 and Stephens 1979) and case studies reinforced with quantitative analyses (as in Shorter and Tilly 1974).

The dichotomized nature of comparative work (case-oriented comparative study versus variable-oriented analysis) makes it an ideal setting for examining methodological issues—especially the gap between qualitative and quantitative orientations and how this gap might be bridged. Comparative work is the one branch of contemporary American social science that accords high status to the qualitative analysis of a small number of cases. In comparative social science, the variable-oriented strategy poses a challenge to traditional qualitative approaches. In other social science research areas, on the other hand, the opposite is true. Thus, in comparative social science there is an established case-oriented tradition that can be directly contrasted with a growing variable-oriented tradition.

In comparative social science the qualitative tradition is strong because other methodological divisions coincide with the qualitative/quantitative split. As the preceding discussion of the logic of the comparative method shows, qualitative researchers tend to ask historically and empirically defined questions and typically answer these questions historically, in terms of origin. Thus, qualitative comparative researchers are both holistic and interpretive in their approach to comparative materials.

The split between qualitative and quantitative work in comparative social science is further aggravated by the fact that all comparativists are concerned with questions of direct relevance to macrosocial units with meaningful social identities (nation-states, for example). These identities are crucial to qualitative researchers, whereas they sometimes confound the work of those who do quantitative cross-national work. (For example, Kuwait is always a troublesome outlier in studies of economic dependence and development.) This aspect of comparative social science magnifies its value as an arena for addressing methodological issues. Contrasts between research strategies are exaggerated and the (often political) implications of methodological decisions are readily apparent.

Development, for example, is an outcome that has attracted the attention
Heterogeneity and Causal Complexity

“Social phenomena are complex.” As social scientists we often make this claim. Sometimes we offer it as justification for the slow rate of social scientific progress. According to our collective folklore there are many, many variables—too many to specify—affecting the phenomena that interest us. Consequently, our explanations are often inadequate. This folklore implies that social phenomena are inordinately complicated and that it is surprising that anyone knows anything about social life.

Yet this depiction of social life does not fit well with experience. We sense that there is a great deal of order to social phenomena—that there is method to the madness. In fact, it is our strong sense that social phenomena are highly ordered that keeps us going. What is frustrating is the gulf that exists between this sense that the complexities of social phenomena can be unraveled and the frequent failures of our attempts to do so. The complaint that social phenomena are complex is not so much an excuse as it is an expression of this frustration.

This sense of order-in-complexity is very strong in comparative social science because it is not difficult to make sense of an individual case (say, a general strike) or to draw a few rough parallels across a range of cases (a number of general strikes separated in time and space). The challenge comes in trying to make sense of the diversity across cases in a way that unites similarities and differences in a single, coherent framework. In other words, it is often impossible to summarize in a theoretically or substantively meaningful way the order that seems apparent across diverse cases.

The problem of identifying order-in-complexity has two general forms.
One is the identification of types of cases—the problem of constructively useful empirical typologies. Most Third World countries are economically dependent on the developed capitalist countries, for example, but in different ways (see Cardoso 1973, 1977). What are the characteristic forms of dependency? How many different forms are there? Such empirical typologies are important because they set boundaries on comparability. It would be unreasonable, for example, to expect a certain change in the world economy to have identical consequences in different types of dependent countries.

The other characteristic form of the problem of order-in-complexity concerns the difficulty involved in assessing causal complexity, especially multiple conjunctural causation. When an outcome results from several different combinations of conditions, it is not easy to identify the decisive one or combinations across a range of cases, especially when the patterns are confounded. Many different combinations of conditions, for example, may cause the leaders of a government to resign (“regime failure”). These combinations may vary both within and between countries. Yet there is usually a describable order to these combinations, a patterning that is comprehensible, identifiable, and possibly predictive as well.

Though very different conceptually, these two characteristic forms of the problem of order-in-complexity parallel each other. The first concerns simplifying the complexity among combinations of characteristics of cases and then constructing a model of the types that exist. The second concerns simplifying the complexity among combinations of causes of an outcome (observable across a range of cases) and then constructing a model of these causal combinations. Because the two characteristic forms of the problem are parallel, I focus the discussion in this chapter on only one—the problem of deciphering causal complexity (especially multiple conjunctural causation). This problem has a definite advantage over the first because it is relevant to the general concern in social science for causation, which, in turn, is central to explanation. Parallels between the two problems are examined in later chapters, where I show that the solutions to these two problems provide complementary approaches to the general problem of deciphering order-in-complexity. I begin by discussing the relation between interests and complexity and then address the issue of causal complexity specifically.

INTERESTS, SIMPLICITY, AND COMPLEXITY

Whether any aspect of social life or social organization is simple or complex depends ultimately on the interests of social scientists (and, by implication, the interests of their audiences). For example, it may be true in a probabilistic sense that children of divorced parents are more likely to drop out of school. This is a perfectly acceptable empirical generalization which presents one aspect of social life in a simple and straightforward manner. It may be entirely unsatisfactory, however, to an investigator (or school principal) interested in understanding how, from the perspective of dropouts, events seem to conspire to force them to quit school. Broken homes may be part of the general context for some of these (apparently) conspiring circumstances, but only a small part. The simple probabilistic relation between broken homes and dropping out is only one of several starting points for a more thorough investigation.

Another simple example comes from the study of face-to-face interaction. Certain patterns of interaction in dyads (asking more questions, for example) are related to the distribution of power. This is a straightforward generalization from empirical data. The fact that this simple, probabilistic relationship exists does not mean, however, that it is pointless to study the variety of situations in which the relation is reversed (with the more powerful person in the dyad displaying an interaction style usually characteristic of less powerful individuals) or to try to generalize about these exceptions. The fact that a general pattern exists does not negate the value of trying to unravel the intricacies of situations in which the relationship is reversed.

The direct relation between interests and the degree of complexity of social phenomena is even more apparent in comparative social science. Several macro-social theories, for example, argue that international inequality is maintained, in part, by the economic dependence of underdeveloped countries on developed countries. Drawing on these theories, a number of researchers have documented a weak but consistently negative cross-national relationship between economic dependence (such as degree of specialization in the export of primary commodities) and economic growth (rate of increase in GNP per capita). Thus, interest in a global argument about international inequality has inspired general tests of the relationship, and a simple cross-national pattern has been confirmed, though not overwhelmingly. (See Borrischer and others 1978 and Rubinson and Holtzman 1981.)

Other perspectives argue, however, that dependency and GNP per capita growth are not necessarily incompatible and that several countries have experienced “associated-dependent development” (Cardoso 1973). Note that this perspective is more an elaboration of the first (which argues, in effect, that dependency uniformly stunts economic development) than a rejection. The second argues that dependency and growth are compatible in a context
of severe (and possibly increasing) internal inequality and regime repressiveness (see Bradshaw 1985). Several studies have documented cases of associated-dependent development and have shown that it forms a complex of traits consistent with theoretical expectations (see Evans 1979). In this second line of research, detailed study at the case level was mandated because the goal was to document associated-dependent development as a relatively complex totality in the modest number of cases where it has occurred.

The contrast between these two schools of thought and the picture they present of the relation between interests and complexity is clear. The first line of research, which dictates relatively little concern for complexity, views underdeveloped countries as a more or less homogeneous mass and applies a single, variable-oriented causal model to the entire population with some success. The second line of research, by contrast, dictates greater concern for complexity and views the underdeveloped world as heterogeneous—a set containing several distinct populations. Neither view is incorrect. Ultimately, the degree to which a set of observations or cases is one population or many depends on the interests of the investigator and those of the intended audience.

The close connection between interests and complexity in comparative research is also evident in many comparatists' predilection for studying cases that register "extreme values" on important dimensions of cross-national variation. Comparatists often argue that cases with extreme values are qualitatively different from other cases and that this quality justifies close attention to their complexity, despite their relative infrequency. The example of countries experiencing social revolutions versus countries experiencing milder forms of social turmoil is useful here. (The argument applies equally well to other infrequent but important large-scale social phenomena.) The fact that some elements of a revolution are present—albeit in muted form—in nonrevolutionary cases does not change the fact that a social revolution is an unusual combination of circumstances. In disaggregated form, the different components of a revolution (which might be present in different countries at different times—for example, executive instability in the United States during the Watergate period) are not revolutionary because it is the whole these components form when combined that gives them their revolutionary character. The fact that a few superficial commonalities exist across revolutionary and nonrevolutionary cases does not detract from the importance of social revolution as a theoretical category with considerable cultural and political significance—a phenomenon demanding the special attention of social scientists.

Some comparatists argue further that cases registering extreme values deserve detailed attention because they provide especially pure examples of certain social phenomena. (See, for instance, Durkheim in *Elementary Forms of the Religious Life*.) Dumont (1970), for example, argues that the Indian caste system provides a unique opportunity to study human social stratification in its purest known form. Anthropologists (such as Harris 1978 and 1985) frequently justify their selection of cases on these grounds, usually with the goal of showing that emergent cultural patterns that may seem bizarre or extreme in some way have important practical value and should therefore be understood in a larger context.

In general, attention to complexity is justified whenever it is argued that a certain historical outcome (say, the Sandinista Revolution in Nicaragua) or set of similar outcomes (say, anti-neocolonial revolutions) is historically or culturally significant in its own right and therefore demanding of social scientific interpretation. The interpretation of important historical events and outcomes (which includes a wide array of macrosocial phenomena ranging from brief episodes of collective action to the rise of the West) is one of the defining features of comparative social science—one of its special missions. Furthermore, this type of interpretation is a primary avenue for the dissemination of social scientific knowledge. While general statements about major dimensions of macrosocial variation and their interrelation (that is, the stuff of variable-oriented comparative social science) are important, the reach of these general statements beyond a purely academic audience is limited by their abstract character (see Ragin 1985).

Interest in complexity is most apparent whenever comparative social scientists address specific historical outcomes, especially when they examine the causes of similar outcomes in different contexts. It is difficult to specify historical causation across a range of cases, however, because such causation is often conjunctural. I turn now to a general discussion of the issue of multiple conjunctural causation as it relates to comparative research.

**CAUSAL COMPLEXITY**

Virtually all everyday events show causal complexity. A funny joke told in the wrong setting can fall flat. Some compliments come off like insults; some insults come off like jokes. Certain behavioral patterns in some individuals are seen as virtues; in others they are seen as vices. In all these examples context plays an important part. This is because human understanding of causation and of events in general is fundamentally holistic. (See
Parts are not viewed in isolation but in context of the whole they form. To change one or more elements often changes how the whole is perceived or understood, which, in turn, has an impact on the meaning of each individual part. (For a more sophisticated treatment of these and related issues, see Goffman 1974.)

Examples of causal complexity at the macrolevel abound. A president's popularity may increase as the result of military intervention in other areas of the world; it can also plummet. News about higher interest rates can cause the stock market to go up or down, depending on other economic news. Appeals to patriotic sentiment by political leaders are sometimes quite effective, depending on the timing and character of the appeal and the specific mix of national symbols used in the appeal. But they often fall flat. It is hazardous to predict when an appeal to patriotism will work. In short, the prediction of collective sentiments, mass behavior, and aggregate trends in general is a risky business. We are awash with political and economic advisors and consultants precisely because of the causal complexity of national-level events and processes.

Most national-level events of interest to comparativists show a great deal of causal complexity. Some polities in the Third World, for example, are thought to be stable because they are democratic (Costa Rica, for example), but others are thought to have failed because of the instability that was magnified by the adoption of democratic procedures (certain countries of sub-Saharan Africa, for instance). The specific contribution of democracy to political stability depends on context. Another example: sometimes a prolonged deterioration in socioeconomic conditions demoralizes people and makes them apathetic (see Gurr 1970). In other circumstances it may make them revolutionary (see Wallon 1984). Still, there are instances of mass mobilization occurring in the absence of important socioeconomic change. Another example: in some countries ethnic inequality fuels ethnic political mobilization (as in Wales), while in others there is ethnic political mobilization without dramatic ethnic inequality (as in Belgium). Ethnic political mobilization can result from a variety of seemingly unrelated causes. There is no universal explanation of this or most other large-scale events common to contemporary nation-states.

Whenever social scientists examine large-scale change (such as the collapse of a polity, the emergence of an ethnic political party, or the rapid decline in support for a regime), they find that it is usually combinations of conditions that produce change. This is not the same as arguing that change results from many variables, as in the statement "both X and Y affect Y," because this latter type of argument asserts that change in either causal variable produces a change in Y, the dependent variable.

When a causal argument cites a combination of conditions, it is concerned with their intersection. It is the intersection of a set of conditions in time and in space that produces many of the large-scale qualitative changes, as well as many of the small-scale events, that interest social scientists, not the separate or independent effects of these conditions. Such processes exhibit what John Stuart Mill (1843) called "chemical causation." The basic idea is that a phenomenon or a change emerges from the intersection of appropriate preconditions—the right ingredients for change. In the absence of any one of the essential ingredients, the phenomenon—or the change—does not emerge. This conjunctural or combinatorial nature is a key feature of causal complexity.

The conjunctural nature of social causation is not the only property of social phenomena that makes them complex. Typically, there are several combinations of conditions that may produce the same emergent phenomenon or the same change. The comparison of many large-scale changes, for example, often leads to the conclusion that for a given type of outcome (say, the formation of regionally based ethnic political parties) there are many causally relevant intersections of conditions. In one set of cases, for example, a coincidence of ethnic inequality, a high degree of government centralization, and increased domination of regional economies by multinational firms may explain the emergence of ethnic parties. In another set, a coincidence of ethnic equality, decentralized government, and an increased migration of members of the numerically dominant ethnic group into regions containing minority ethnic groups might explain the formation of ethnic parties. In the first set, it is the lure of separatism that spurs ethnic mobilization. In the second, it is the infringement by the majority group on formerly ethnic turf that stimulates ethnic mobilization. These two combinations of conditions certainly would not exhaust all instances of regionally based ethnic political mobilization. Other combinations might be identified, and the specification of other causal combinations might further the identification of different types of ethnic mobilization. The point is not the number of causal combinations or types but the fact that the same general outcome—ethnic political mobilization—may result from various combinations of causes.

That social causation is often both multiple and conjunctural is consistent with commonsense notions about how the world works. The key consider-
tion is the whole—how different conditions or parts fit together. The problem that social scientists face is to unravel the empirically relevant causal combinations. In other words, once the possibility of multiple conjunctural causation is admitted, it is necessary to determine how different conditions fit together—and in how many different combinations—to produce a given outcome. The identification and interpretation of these causal configurations (or causal complexes) allows the investigator to delineate the different empirical processes and causal mechanisms relevant to a specific outcome.

Thus, social phenomena are complex and difficult to unravel not because there are too many variables affecting them, although the number of causal variables is certainly important, but because different causally relevant conditions can combine in a variety of ways to produce a given outcome. In short, it is the combinatorial, and often complexity combinatorial, nature of social causation that makes the problem of identifying order-in-complexity demanding.

THE ANALYSIS OF CAUSAL COMPLEXITY

Causal complexity is not easily unraveled, paradoxically, because of the relatively limited diversity of empirical social phenomena. The similarities and differences among nonexperimental cases confound attempts to specify social causation unambiguously. If social scientists could create social phenomena displaying all the different combinations of causal conditions and then observe outcomes (that is, if they could conduct experiments), it would be a simple matter to explicate the decisive causal combinations. Obviously, this is not possible, so they have developed research strategies appropriate for nonexperimental data. Before addressing nonexperimental strategies, I examine the experimental design standard that inspires nonexperimental approaches.

The ideal social scientific comparison is identical in structure to the simple experiment. In a simple experiment an investigator compares an experimental group, which has been subjected to an experimental treatment, with a control group, which differs from the experimental group in only one respect—it does not receive the treatment. Only one factor, the treatment, is allowed to vary; all other conditions are held constant or randomized. If significant posttreatment differences between the experimental and control group emerge, these differences are credited to the experimental or treatment variable, and a tentative cause–effect sequence is established.

Experimental design has an unrivaled directness and simplicity, and it is immune to some of the inferential errors that affect other methods. Of course, experimental research is confronted with a host of threats to its validity (see Campbell and Stanley 1966; Cook and Campbell 1979), but it is more capable of deciphering causal complexity than other techniques. This is because it allows the investigator to manipulate causes directly—to manufacture a basis for making comparisons.

Many features of social life confound attempts to unravel causal complexity when experimental methods cannot be used. Three are especially relevant to this discussion because they concern issues of multiple and conjunctural causation. First, rarely does an outcome of interest to social scientists have a single cause. The conditions conducive to strikes, for example, are many; there is no single condition that is universally capable of causing a strike. Second, causes rarely operate in isolation. Usually, it is the combined effect of various conditions, their intersection in time and space, that produces a certain outcome. Thus, social causation is often both multiple and conjunctural, involving different combinations of causal conditions. Third, a specific cause may have opposite effects depending on context. For example, changes in living conditions may increase or decrease the probability of strikes, depending on other social and political conditions (Snyder 1975). The fact that some conditions have contradictory effects depending on context further complicates the identification of empirical regularities because it may appear that a condition is irrelevant when in fact it is an essential part of several causal combinations in both its presence and absence state.

Natural scientists attempt to establish causes that are either necessary or sufficient or both necessary and sufficient. In situations where causation is multiple and conjunctural, there may be no necessary or sufficient conditions for an outcome of interest. For example, if outcome Y occurs following the combination of X₁ and X₂, or the combination of X₃ and X₄, then none of the single conditions, X₁ through X₄, is either necessary or sufficient to produce Y. This possibility complicates the observation of causal relations in nonexperimental settings because investigators typically are not able to observe all logical combinations of the relevant causal conditions. Yet comparative social scientists are often confronted with phenomena that display this type of causation.

Multiple conjunctural causation can be assessed directly only in experimental designs. Suppose a researcher believes that three factors (Xᵥ, Xᵥ, and X₃) are causally relevant to Y and has strong reason to suspect that different
TABLE 1: Experimental Design Exhausting Logically Possible Combinations of Three Treatments

<table>
<thead>
<tr>
<th>Treatments</th>
<th>$x_1$</th>
<th>$x_2$</th>
<th>$x_3$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1:</td>
<td>absent</td>
<td>absent</td>
<td>absent</td>
</tr>
<tr>
<td>Group 2:</td>
<td>present</td>
<td>absent</td>
<td>absent</td>
</tr>
<tr>
<td>Group 3:</td>
<td>absent</td>
<td>present</td>
<td>absent</td>
</tr>
<tr>
<td>*Group 4:</td>
<td>present</td>
<td>absent</td>
<td>absent</td>
</tr>
<tr>
<td>Group 5:</td>
<td>absent</td>
<td>absent</td>
<td>present</td>
</tr>
<tr>
<td>Group 6:</td>
<td>present</td>
<td>absent</td>
<td>present</td>
</tr>
<tr>
<td>*Group 7:</td>
<td>absent</td>
<td>present</td>
<td>present</td>
</tr>
<tr>
<td>Group 8:</td>
<td>present</td>
<td>present</td>
<td>present</td>
</tr>
</tbody>
</table>

*Groups showing change in outcome variable (y).

combinations of these factors cause Y. The presence of any one factor alone is not thought to be sufficient; only certain (as yet unspecified) combinations of factors are capable of causing Y. Determining the relevant combinations of conditions is a simple matter if an experimental design is feasible. In this example the experimenter would set up eight different experimental groups and apply different combinations of the treatment variables, as shown in Table 1. The investigator would examine Y under each of the eight conditions to see which combinations of $X$'s cause Y. If Y were to occur only in groups 4 and 7, for example, the investigator would conclude that if $X_1$ is accompanied by $X_2$ or $X_3$, but not by both, then Y will result. (In this example, $X_2$ is a necessary but not a sufficient condition for Y.)

The beauty of experimental design is that it is a simple matter to examine combinations of conditions and determine the specific combinations that are causally relevant. Thus, causal complexity, which is a key characteristic of social life, is unraveled. Decisive comparisons can be made because all the relevant combinations of conditions are manufactured by the investigator. In the hypothetical study described here, Y is caused by $X_1$ when it is combined with either $X_2$ or $X_3$, but not when it is combined with both. There are three decisive comparisons that establish this finding: the comparison of group 4 with groups 2 and 3, which establishes that $X_1$ and $X_2$ must be combined to produce Y; the comparison of group 7 with groups 3 and 5, which establishes that $X_2$ and $X_3$ must be combined to produce Y; and the comparison of groups 4 and 7 with group 8, which establishes that when $X_2$ is combined with both $X_1$ and $X_3$, then Y does not result. (Other comparisons are also important, but these are the most decisive.) In each of the key comparisons an experimental group is compared with other groups differing in only one causally relevant condition.

Of course, social scientists rarely ask questions that can be addressed with experimental methods. Their questions are usually shaped by the events around them, and social scientists often are called upon to interpret events (or simply desire to do so), including the social and historical forces that have shaped contemporary social arrangements. For example, some social scientists are interested in the conditions that lead to different types of collective action. What conditions cause peasants to rebel? What conditions cause workers to go on strike? What conditions cause citizens to feel nationalistic or cause members of an ethnic minority to organize ethnic political parties? Obviously, experimental methods are not applicable to these questions. It is impossible to manipulate conditions affecting large masses of people, and social scientists must be content to study naturally occurring (that is, "non-experimental") data. Yet there is good reason to believe that the causes of these phenomena are both multiple and conjunctural and therefore require experiment-like analyses. Only when naturally occurring data approximate experimental data is it possible to decipher the order-in-complexity that seems apparent in these phenomena.

Consider, for example, the following hypothetical examination of the causes of peasant revolts in different areas within a single country. Assume there are four causes to consider across six different regions, with different combinations of causes appearing as in Table 2.

There are no experiment-like contrasts among the six regions because all pairs of regions differ on at least two of the four causes. When this pattern exists, it is difficult to draw any strong conclusion. For example, data from regions 3 and 6 indicate that land hunger combined with an absence of commercialization of agriculture may be important to peasant revolts. But region 4 had the opposite pattern on these two variables and also experienced a revolt. Regions 3 and 4 both combine peasant communalism and few middle peasants, suggesting that peasant revolts are more likely in traditional peasant communities lacking an upwardly mobile class of middle peasants. But region 6 has the opposite values on these two variables and experienced a revolt. Examination of the four regions with revolts suggests that if any two of four conditions are present, then a peasant revolt is likely. But region 2
TABLE 2: Hypothetical Regional Data Showing Distribution of Causes of Peasant Revolts

<table>
<thead>
<tr>
<th>Region</th>
<th>Revolt</th>
<th>L</th>
<th>C</th>
<th>P</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>2</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>3</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>4</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>5</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>6</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>yes</td>
</tr>
</tbody>
</table>

$L = \text{Land hunger}$
$C = \text{Commercialization of agriculture}$
$P = \text{Peasant communalism}$
$M = \text{Middle peasants}$

had all four conditions present, and a revolt failed to occur. In short, it would be unwise to draw any strong conclusions from these data. The diversity of causal patterns among these cases is too limited to permit sound conclusions based on the data.  

CURRENT ALTERNATIVES TO EXPERIMENTAL DESIGN

The observations offered above concerning the limited applicability of experimental designs to most social science data are certainly not new. The discussion serves primarily to establish what most American-trained social scientists, both comparativists and noncomparativists, consider to be the ultimate standard in social science methodology: the precision and causal certainty of experimental design. (See also Lieberson 1985.) Social scientific statements about empirical phenomena are thought to be sound to the extent that the demands of experimental design (which could be considered a methodological ideal type) have been met. The closer the approximation to the type of comparison fundamental to experimental design, the more sound the statement of empirical regularity.

Obviously, social scientists rarely come close, and some argue that social scientists should simply acknowledge the limitations of their efforts and give up the experimental design standard. While it might be possible to abandon the standard, comparison still provides the primary basis for empirical generalization. As Swanson (1971: 145) notes, ”thinking without comparison is unthinkable”—and comparison, at its social scientific best, involves experiment-like contrasts. Is it possible to ask the questions that social scientists ask and still retain experiment-like comparison as an ideal? There have been at least two basic responses to this question. Each response constitutes a research strategy; both research strategies have long histories.

The first strategy has been for comparatively oriented social scientists to use case-oriented methods, also known as the comparative method (see Chapters 1 and 3; Smelser 1973; Ragin 1983), qualitative historical methods (Ragin and Zaret 1983), the method of systematic comparative illustration (Smelser 1976), and logical methods (Gee 1950; see also Skocpol and Somers 1980), to name only a few of the many labels that have been applied. Investigators who use this strategy usually work only with small, theoretically defined sets of cases, and they compare cases with each other as wholes to arrive at modest generalizations, usually about historical origins and outcomes, concerning relatively narrow classes of phenomena.

Some have argued that this tradition follows in the footsteps of Weber, and German historiography more generally, and that it is primarily an interpretive tradition. While there is a good deal of truth to the claim that the tradition is Weberian (Ragin and Zaret 1983), this strategy is usually not merely interpretive but also causal-analytic. To characterize this tradition as predominantly interpretive implies that the experimental design standard is irrelevant—that a concern for historical essences and particularities removes any need for experiment-like comparisons.

Considering only extreme examples of case-oriented investigation, it is true that this type of inquiry often involves a different way of seeing social phenomena. The best work in this tradition, however, the work that is most relevant to the concerns of social scientists, does not stop with historical interpretation. Two tasks are usually apparent: interpreting historically significant or decisive social phenomena and determining the causes of important categories of social phenomena (such as the origins of different types of modernizing revolutions, as in Moore 1966).

The case-oriented strategy attempts to approximate experimental rigor by identifying comparable instances of a phenomenon of interest and then analyzing the theoretically important similarities and differences among them. This approach provides a basis for establishing modest empirical generalizations concerning historically defined categories of social phenomena. Of course, there is rarely a sufficient variety of cases to prove or disprove causal arguments. Typically, several possible explanations can be supported
in a given set of cases. The limited variety of cases imposes a necessary indeterminancy. Thus, the investigator must support his or her chosen explanation by citing surrounding circumstances and, more generally, by interpreting cases. This attention to the details of individual cases engenders a rich research dialogue between the investigator and the evidence.

The second strategy also has deep intellectual roots, which can be traced back to Comte and Durkheim (see Regin and Zaret 1983), but it has recently received a strong boost from mainstream social science methodology, especially quantitative methods. The second strategy typically is not concerned with accounting for historically defined phenomena, such as modernizing revolutions or peasant rebellions. It is concerned with formulating broad generalizations about societies and other large-scale social organizations. Unlike the first strategy, which is oriented toward explaining specific cases or historically defined categories of social phenomena, the second strategy is more concerned with variables and their relationships. Its primary goal is to test abstract hypotheses derived from general theories concerning relationships between features of social units such as societies conceived as variables.

A preference for generality over specificity enhances the compatibility of the second strategy with the goals of mainstream social science which, in turn, has allowed the use of mainstream methods, especially techniques of statistical control. This strategy attempts to approximate the rigor of experimental methods through statistical manipulation. The effects of competing and confounding variables are “removed” or “partialed” in estimating the effect of each variable. In this way conditions are “controlled,” and a basis for generalizing about confounded causes is manufactured mathematically. (These procedures and the logic of statistical control in nonexperimental research in general are critically evaluated in Lieberson 1985.)

Note that in this strategy it is possible to manufacture a basis for generalizing about causes only by making simplifying assumptions about their operation. These assumptions sometimes are not necessary, but they greatly simplify the task of examining empirical data and the problem of summarizing and presenting the general patterns of covariation that exist among diverse cases. Statistical techniques are biased toward simplifying complexity through assumptions because the assumptions are often built into the procedures themselves. Thus, these techniques do not decipher causal complexity but eliminate perplexing elements of it.

A common (and sometimes testable) assumption, for example, is that causes are additive. One problem with this assumption is that it asserts that the effect of a cause is the same in all contexts—regardless of the values or levels of other causal variables. This assertion directly contradicts the idea, held dear by many case-oriented investigators, that causation, especially historical causation, is often multiple and conjunctural. (This issue is addressed in greater detail in Chapters 3 and 4.) Assumptions that are built into statistical models have a profound effect on the nature of the research dialogue—the interaction between the investigator and the evidence—that develops in the variable-oriented approach. The dialogue centers on the issue of specifying the “correct” model. The identity, diversity, and particularity of cases tend to be obscured.

In the next two chapters, I examine these broad strategies in detail. I pay special attention to the way scholars in both traditions have attempted to approximate features of experimental design. It is important to point out that in many respects I present exaggerated versions of these strategies and that many variants and combinations exist. In fact, the best comparative work usually combines these two strategies in some way (see Chapter 5). After all, for most comparativists the problem is not choosing strategies per se, but doing good comparative work. Following my presentation of the basics of these broad strategies, I discuss several ways these strategies have been combined. Finally, I present a middle road between the two which integrates important features of both. This integration is the foundation for my elaboration of Boolean techniques of qualitative comparison.