
In Defense of Positivism

Author(s): Jonathan H. Turner

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IN DEFENSE OF POSITIVISM

JONATHAN H. TURNER
Netherlands Institute for Advanced Study
and
University of California at Riverside

WHAT'S SO BAD ABOUT POSITIVISM?

In 1830, Auguste Comte proclaimed that sociology could take its place among the sciences (Comte, 1830–1842). He argued that sociology had reached a “positivistic stage” and could now develop laws of human organization like those in the other sciences. Our retrospective look at Comte’s advocacy is, to say the least, unkind. We now see Comte as somewhat eccentric; and while we pay homage to him in our introductory textbooks as the titular founder of sociology, we view his “positivism” with a suspicious eye. Indeed, positivism has negative connotations in sociological theory these days, being equated on the one side with raw empiricism and on the other side with naivete about the real workings of humans. My sense is that this suspicion about positivism has worked against the cumulation of knowledge about human action, interaction, and organization. To posit the view that timeless laws of the social universe can be developed invites derision and smiles by those secure in their knowledge that humans and their patterns of social organization are unique and not, therefore, amenable to the same kind of inquiry as in the other natural sciences.

I would like to challenge this smug cynicism by reviewing the diverse ways that sociologists construct theory. For a discipline cumulates knowledge by building and testing theories. And so, if we find that there is little theory in a discipline, we can be sure that there is precious little knowledge about the workings of its domain of inquiry. My belief is that “theorists” in sociology rarely theorize, and as a result, we know embarrassingly little about the social universe. This lack of knowledge is not because of positivism; on the contrary, it is because we have failed to be positivists in Comte’s sense of this term.

What, then, did Comte actually say? The initial pages of his *System of Positive Philosophy* (1830: 5–6) gives us the essential message. First, the social universe is amenable to the development of abstract laws that can be tested through the careful collection of data. Second, these abstract laws will denote the basic and generic properties of the social universe and they will specify their “natural relations.” Third, such laws will not be overly concerned with causality, or functions. I think that we have violated all of Comte’s basic points. Social theorists seriously question whether or not there are invariant properties of our universe; they shy away from abstract statements that seek to state relations among these prop-

erties; and when theorists do make theoretical statements, they tend to develop empirical accounts of historical causes or they engage in flights of philosophical fancy into the realm of universal functions.

Let me document these charges with a review of the four basic theoretical approaches in sociology: (1) meta-theoretical discussions; (2) analytical schemes; (3) propositional approaches; and (4) modeling techniques. I am excluding several activities, such as history of ideas, sociology of knowledge, and intellectual biographies, which are clearly not theory, although many “theorists” in sociology engage in this kind of activity.

STRATEGIES FOR BUILDING SOCIOLOGICAL THEORY

META-THEORY

The term “meta” means to occur after; and so, meta-theory should be analyses of theories after they have been developed. But in sociology, meta-theory is often considered a prerequisite to building theory, which makes its development a contradiction in terms. True, at times meta-theory involves the reanalysis of Marx, Weber, Durkheim, and more recently, Parsons, in an effort to extract the basic assumptions or logic of their works (e.g., Alexander, 1982–4; Munch 1982; Habermas, 1981). But the basic exercise is to think about the essence of human activity, to agonize over what kind of theory is possible, to extract the essential problems of social theory, and so on. Such works are typically long, filled with quotations, and extensive footnotes. And they become embroiled in the old philosophical issues—idealism vs. materialism, subject vs. object, induction vs. deduction, realism vs. nominalism, and the like.

For all their erudition, my sense is that these works have the “cart before the horse.” Meta-theory is best executed, as it was in physics during the early decades of this century, when one has some real theory to meta-theorize about. Without some concrete laws and principles to ponder, meta-theory becomes excessively philosophical. It stays in the rarified and reified world of abstraction; it becomes embroiled in unresolvable philosophical issues that are best left to philosophers; and it encourages self-sustaining comment and debate. But worst of all, it is untestable and will not help develop testable theories. In fact, I think that meta-theory prevents us from developing theories.

ANALYTICAL SCHEMES

The next most prominent theoretical strategy in sociology is the development of analytical schemes. Such an approach involves the elaboration of abstract concepts that are organized into a typology or classification scheme. Each concept in such analytical schemes denotes a basic property of the social universe; and then the concepts themselves are organized into a typology. There are many different varieties of analytical schemes but they all emphasize typologizing. The concepts of such schemes chop up the universe; then, the ordering of the concepts into a typology gives the social world a sense of order; and finally, explanation consists of finding a place in the classification scheme for an empirical event. I think that there are two basic types of analytical schemes: (1) naturalistic/positivistic schemes which try to develop a tightly woven system of categories; and (2) descriptive/sensitizing schemes which are loosely assembled congeries of concepts that sensitize and orient researchers to certain critical processes. Naturalistic/positivistic schemes assume that there are timeless and invariant processes in the social universe, much as there are in the physical and biological realms. The goal is to create an abstract conceptual typology that is isomorphic with these timeless processes (e.g., Parsons, 1978; Wallace, 1983). In contrast, descriptive/sensitizing schemes are typically more skeptical about the timeless quality of social affairs (e.g., Giddens, 1984, 1981, 1977; Blumer, 1969). They argue that concepts and their interrelations must always be provisional and sensitizing because the nature of human activity is to change the very reality depicted by concepts and theoretical statements. Hence, except for a few conceptual categories, the sensitizing scheme must be flexible and capable of being revised as circumstances in the empirical world change; and thus, explanation is simply an "interpretation of events" in terms of the provisional and sensitizing concepts in the scheme.

Like meta-theory, it is often argued that analytical schemes are a necessary prerequisite for developing other forms of theory. Until one has a scheme that organizes the properties of the universe, it is difficult to develop propositions and models about specific events (Münich, 1982; Alexander, 1982-4). For without the general analytical framework, how can a theorist or researcher know what to examine?

My belief is that such schemes can only describe and that they cannot easily generate abstract laws or principles. Naturalistic/positivistic typologies order the universe in ways that beg for a true theory to explain them. Moreover, builders of typologies rarely translate them into testable propositions, with the result that the typology becomes a finished product rather than a prerequisite for theorizing. Descriptive/sensitizing schemes allow the theorist to "interpret" empirical events, but one theorist's interpretation is often not another's. What is more, such schemes must often be emotionally and intellectually internalized before they can be used, with the con-

sequence that their logic can never really be tested against the empirical facts. And in the end, they do not generate abstract propositions; rather, they typically describe empirical events with a new vocabulary.

PROPOSITIONAL STRATEGIES

A proposition is a theoretical statement that specifies the connection between two or more variables, informing us how variation in one concept is accounted for by variation in another. Propositional schemes differ the most in terms of (1) their level of abstraction and (2) their procedures for ordering propositions. Some propositional systems are highly abstract and contain concepts that do not denote any particular case but all cases of a type, whereas others simply summarize the events of a particular empirical case. Not only do propositional schemes vary in terms of abstractness, but also in how propositions are laced together into a format. Some weave propositions together with a formal calculus, while others create loose inventories of propositions. These differences can, I think, be summarized by distinguishing three types of propositional schemes: (a) axiomatic, (b) formal, and (c) empirical. The first two—(a) and (b)—are clearly theoretical formats, whereas some types of (c) are simply summaries of research findings. Let me review each of these three types.

(a) An axiomatic theory is constructed from abstract concepts, formal propositions, statements on scope conditions, and a hierarchical ordering of propositions. Those propositions at the top of the hierarchy constitute the axioms from which all other theoretical statements are logically derived in terms of an explicit calculus. There are, however, some fatal limitations on the use of axiomatic theory in sociology. In terms of strict adherence to the rules of deduction (the details of which are not critical for my purposes here), most interesting concepts and propositions in sociology cannot be legitimately employed in axiomatic schemes, because the concepts are not stated with sufficient precision and because they cannot be incorporated into propositions that state unambiguously the relationship among concepts. Axiomatic theory also requires controls on all potential extraneous variables so that the logical system of deduction from axiom to empirical reality is not contaminated by extraneous factors. Sociologists can rarely create such controls. Thus, axiomatic theory can be used only when very precise definitions of concepts exist, when concepts are organized into propositions using a precise calculus that specifies relations unambiguously, and when the contaminating effects of extraneous variables are eliminated (Costner and Leik, 1964; Freese, 1980). These considerations have led some (e.g., Blumer, 1969) to dismiss deductive theory and positivism as a useful approach for cumulating knowledge. A few others have ignored these limitations and used the language of axiomatic theory (axioms, theorems,

corollaries, and the like), but at best, these efforts are pseudoaxiomatic schemes (e.g., Homans, 1974; Blau, 1977; Emerson, 1972). In fact, I think it is wise to call them "formal" propositional schemes (Freese, 1980).

(b) Formal theories are watered down versions of axiomatic schemes. The idea is to develop highly abstract propositions which are grouped together and seen as higher order laws. The goal of explanation is to see empirical events as an instance or example of this "covering law" (e.g., Homans, 1974; Blau, 1977). Deductions from the law are made, but they are much looser, rarely conforming to the rules of an explicit calculus. Moreover, there is a recognition that extraneous variables can not always be excluded, and so, the propositions usually have the disclaimer, "other things being equal."

(c) Empirical formats consist of generalizations from specific events in an empirical context. Most substantive areas and subfields of sociology are filled with these kind of propositions. Some of these propositions are not theoretical, because they are too tied to empirical contexts. In fact, they are statements of empirical regularities that need a theory to explain them. Others are often termed "middle range theories" (Merton, 1968), because they are more abstract than a research finding and because their empirical content pertains to variables that exist for more than one empirical case.

MODELING STRATEGIES

At times, theorists draw pictures of social events. Some models are drawn with neutral languages, such as mathematics in which an equation is presented that is presumed to "map" and "represent" an empirical process. I prefer to visualize such equations as propositions (formal statements of relations among variables) *unless* they can be used to generate a picture or some form of graphic representation of processes. There is no clear consensus on what a model is, but in sociological theory, there is a range of activity which involves representing concepts and their relations as a "picture" of a social process. For me, then, a model is a diagrammatic representation of social events. The diagrammatic elements of a model include the arrangement of concepts in visual space so as to reflect the ordering of events in the universe and the use of symbols to mark the connections among concepts (such as lines, arrows, vectors, correlation coefficients, and other ways of representing connections among variables). Moreover, the elements of a model may be weighted in some way, and they often involve complex representations of relations among concepts, including lag effects, feedback loops, mutual interactions, cycles, and other potential ways that properties of the universe affect each other. My sense is that sociologists generally construct two different types of models: (a) analytical and (b) causal. This distinction is, I

admit, somewhat arbitrary, but it is nonetheless important. Let me briefly indicate my meaning.

(a) Some models are more abstract than others; and these abstract models usually reveal more complexity in the representation of connections among variables. For example, feedback loops, cycles, mutual effects, weightings of effects, and other connective representations complicate the representations of connections among the variables and make them difficult to summarize with simple statistics. Typically, analytical models are usually drawn to specify the relations among more abstract and generic processes (e.g., Turner, 1984). Often, they are used to delineate the processes that operate to connect the concepts of an axiomatic, or more likely, a formal theory. In this way, the analytical model maps the processes that operate to connect the concepts in an abstract proposition.

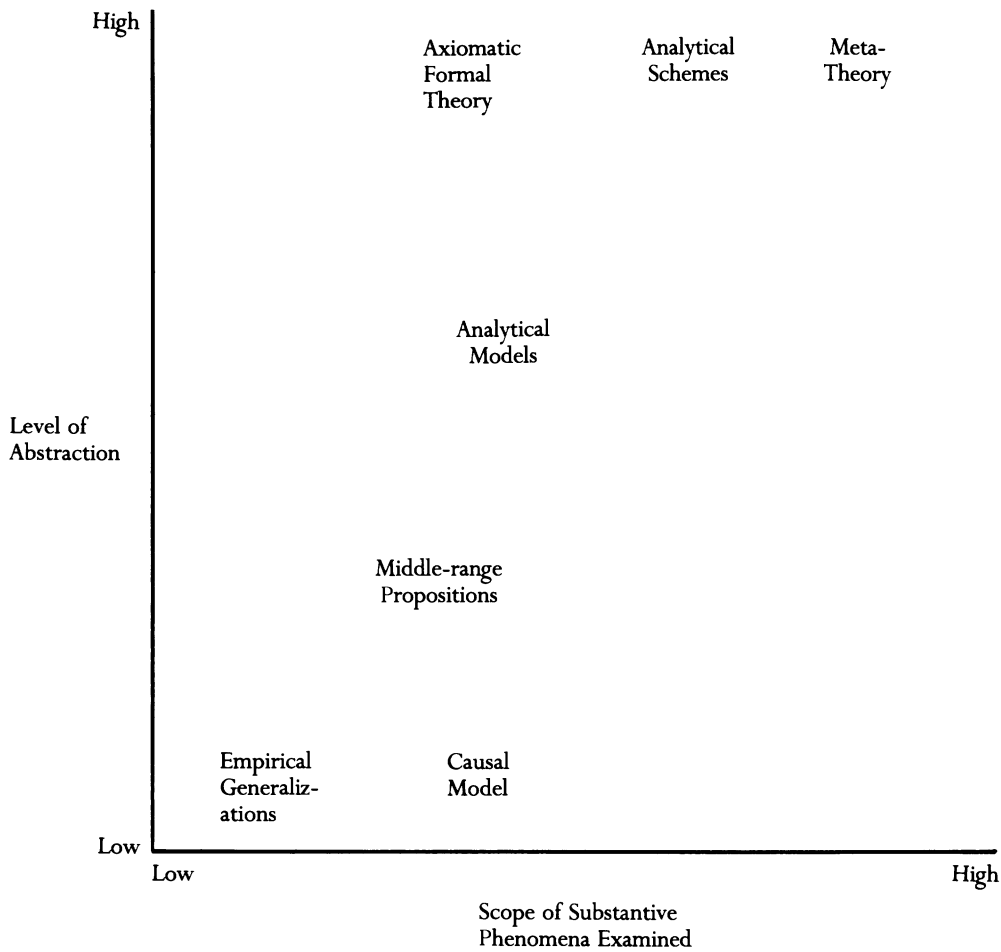
(b) In contrast, the less abstract models depict a clear causal sequence: independent variables that affect variation in some dependent variable; and if the model is more complex, it might also highlight intervening variables and perhaps even some interaction effects among the variables. Causal models are usually drawn in order to provide a more detailed interpretation of an empirical generalization. They are designed to sort out the respective influences of variables, usually in some temporal sequence, as they operate on some dependent variable of interest. At times a causal model becomes a way of representing the elements of a middle range theory so as to connect these elements to the particulars of a specific empirical context.

COMPARING SOCIOLOGY'S THEORETICAL STRATEGIES

I have summarized these theoretical strategies in Figure 1 with respect to their abstractness and scope. In terms of their level of abstraction, empirical generalizations and causal models are tied to specific empirical contexts. A generalization summarizes a particular set of research findings, whereas a simple causal model typically involves correlational statements linking empirically measured variables. Middle range propositions are more abstract because they seek to explain events for a whole class of phenomena. Yet, the concepts of middle range theory are filled with empirical content which limits their abstractness. An analytical model is generally more abstract than a middle range theory because it introduces generic properties of the social universe to explain some general class of empirical events. Axiomatic and formal propositional schemes, analytical schemes, and meta-theory are even more abstract in that they reveal no empirical content about specific times, places, and contexts.

What distinguishes theoretical approaches at any given level of abstraction is their scope or the range of phenomena covered by theoretical statements. The scope of empirical generalizations tends to be limited by the fact that they emanate from research

Figure 1: Variations in Types Theoretical Formats



findings which, by their nature, focus on a limited range of phenomena. Causal models often add extra variables in an effort to explain more variance, and so, they frequently expand the scope of an empirical generalization. Middle range theories try to explain a whole class of phenomena—say, for example, delinquency, revolutions, ethnic antagonism, urbanization, etc. They are, therefore, broader in scope than empirical generalizations and causal models, but the very goal of middle range theory is to limit scope by trying to explain only one class of empirical events. Analytical models are usually broader than middle range theories, but they tend to be limited because they too are about a specific range of phenomena—ethnic relations, political centralization, differentiation in organizations, and similar topics. They are somewhat broader in scope because it is easier to include more variables in a model than in a series of middle range propositions.

Axiomatic and formal propositional schemes tend to be limited in scope because they focus on some processes, while ignoring others. While the proponents of these schemes often claim that their propositions explain all of reality, it is more reasonable to see these abstract propositions as pertaining to only a limited range of phenomena. Analytical schemes in sociological theory tend to be all-encompassing, seeking to explain human action, interaction, and organization in one “grand scheme.” They are rarely modest efforts; and while they differ rather dramatically in their content, they are all similar in their presumption that they encompass “the social universe.” Meta-theories are very broad, but diffuse and imprecise. They explicate all that needs to be explained and present a philosophical justification for developing a particular form of explanation. But they tend to be rather grandiose; and this fact makes them so broad as to be somewhat vacuous.

EVALUATING SOCIOLOGY'S THEORETICAL STRATEGIES

Comte's positivism argues that the best theoretical statements are those which are highly abstract and denote generic properties of the universe while, at the same time, they are sufficiently precise so as to be testable. From this point of view, then, empirical generalizations and causal models are not theory at all. They are useful summaries of data which need a theory to explain them. Some argue that theory can be built from such summaries of empirical regularities, since it is possible to induct from the facts more general properties of the universe. I doubt this, because a much more "creative leap" away from empirical context is necessary in order to isolate the generic and fundamental processes that a set of empirical regularities illustrate. I suspect that once buried in the facts, one rarely rises above them. At the other extreme, meta-theory is interesting, but at this stage in the development of theory, it is counter-productive. My sense is that proponents of various philosophical camps become so pre-occupied with debating and footnoting each other that they never get around to developing theory.

Analytical schemes often suffer from the same problems as meta-theory. Naturalistic/positivistic schemes have, I am convinced, a tendency to become overly concerned with their architectural majesty. In an effort to construct an orderly scheme which mirrors at an abstract level the empirical world in all its dimensions, naturalistic/positivistic schemes get ever more complex. And, as new elements are added to the scheme, efforts to reconcile new portions with the old take precedence over making the scheme testable. Moreover, the scheme as a whole is impossible to test, because relations among its elements cover such a broad range of phenomena and because they are rarely stated with great precision.

Sensitizing/descriptive schemes are typically constructed by those who reject a natural science or positivistic perspective on how to accumulate knowledge (Giddens, 1977; Blumer, 1969). One can never have definitive "tests" of theoretical statements, because all statements will eventually be wrong because the social universe is constantly changing its fundamental nature. Thus, only a loose framework of concepts can be used to interpret events. Much like naturalistic approaches, however, sensitizing schemes also become self-sustaining because they are so loosely structured and vague that the facts can always be bent to fit the scheme. Hence, the scheme can never be refuted, nor I suspect, revised on the basis of actual empirical events.

This leaves axiomatic/formal propositional formats, analytical models, and middle range propositions. As I indicated, the restrictions of true axiomatic theory make its use impractical in sociology. In my view, formal theorizing is the most useful theoretical approach for sociology because it contains abstract concepts that are linked with sufficient precision so as to be testable. Analytical models can

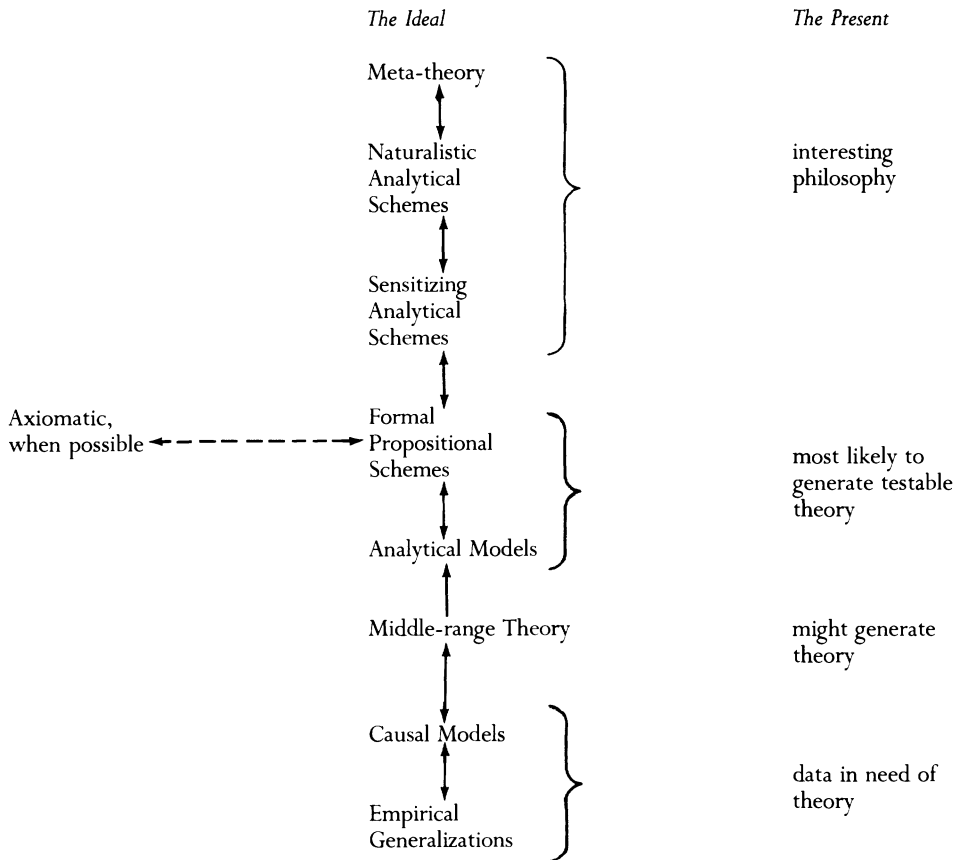
also be important for building sociological theory. Yet, they are hard to test as a whole, since they contain too many concepts and linkages to be directly tested. Therefore, an analytical model is best used to specify the processes by which concepts in a formal proposition are connected. For example, if a proposition states that the "degree of differentiation" is a function of "system size," the model can tell us why and how "size" and "differentiation" are connected. That is, we can get a better sense for the underlying processes by which "size" increases "differentiation" (and perhaps vice versa). Alternatively, analytical models can also be a starting point for formal theorizing. By isolating basic processes and mapping their complex interconnections, we can get a sense for the important social processes about which we need to develop formal propositions. And, while the model as a whole cannot be easily tested, it can be decomposed into abstract propositional statements which are more amenable to tests.

Middle range propositions are, I feel, less useful as places to begin theory-building. They tend to be too filled with empirical content, much of which does not pertain to the more basic, enduring, and generic features of the social universe. For example, a "theory of ethnic antagonism" is often difficult to translate into a more general set of propositions or a model on conflict. Moreover, scholars working at this middle range tend to become increasingly empirical as they seek to devise ways to test their theories. Their propositions become, I have found, ever more like empirical generalizations as more research content is added. One reason for this tendency is that because the generalizations are empirical and stated propositionally, they are readily tested, whereas to extract the generic content and develop a more abstract statement involves a "creative leap" which someone working in a substantive area may be unwilling to make. Moreover, editors of journals tend to be researchers and demand that a theory be "tested," thereby discouraging raising the level of abstraction of a middle range theory.

Let me conclude by being even more "naive" than Comte. In Figure 2, I have summarized the above conclusions in the right column. Meta-theory, naturalistic analytical schemes, and sensitizing schemes are interesting philosophy, but poor theory. Formal propositional statements and analytical models offer the best place to begin theorizing, especially if interplay between them is possible. Middle range theories have rarely realized their theoretical potential, tending to move toward empirical generalizations. Causal models and empirical generalizations are useful in that they give theorists some sense of empirical regularities, but without creative leaps in scope and abstraction, they are not theoretical. They are usually data in need of a theory to explain them.

In the left column, I have presented my idealized view of the proper place of each theoretical approach for generating knowledge. If we begin to accumulate bodies of formal laws, then it is desirable to extract

Figure 2: An Idealized Portrayal Among Theoretical Approaches



the key concepts and look at these as the basic sensitizing and orienting concepts of sociology (much as magnetism, gravity, relativity, and the like were for early 20th century physics). We may even want to construct a formal analytical scheme and ponder on the meta-theoretical implications of these. In turn, such pondering can help re-formulate or clarify analytical schemes which, in turn, can help construct new, or reverse old, formal propositions. But without a body of formal laws to pull meta-theory and analytical schemes back into the domain of the testable, meta-theory and analytical schemes become hopelessly self-sustaining and detached from the very reality they are supposed to help clarify.

For building theory, then, the most crucial interchange is between formal propositions and analytical models. I think that there is a creative synergy between translating propositions into models, and vice versa. This is the level at which most theory should be couched, but unfortunately, this is just where the least theoretical activity occurs.

Middle range propositions can inspire analytical models which, in turn, encourage the development of more abstract propositions. Such will be the case, however, only if there already exists a body of useful

abstract propositions which can serve as an inducement to raise the level of abstraction of empirically laden statements. Conversely, middle range theories can potentially be one vehicle by which more abstract propositions—say, on conflict processes—are attached to specific empirical issues, such as ethnic conflict. Thus, middle range theories can become part of the deductive calculus of a formal theoretical system.

Finally, research generalizations and causal modeling of empirical variables can help test the implications of formal theories. They become the lowest order generalizations in the deductive system of formal theory. They might also stimulate inductive efforts to develop more abstract propositions of greater scope, but as I indicated earlier, I have my doubts if this will occur.

In sum, I think that sociology has avoided the one kind of theorizing that can cumulate knowledge. We have either retreated up into the meta-theoretical stratosphere or buried ourselves under mounds of raw data. We have, in other words, avoided being positivists. We have collected myriads of facts and interpretations of them, and we have created numerous grand schemes and typologies. Robert Merton (1968) saw this some time ago in his advocacy for

theories of one middle range, but he loaded the dice toward more data collection. I think that we ought to go back to Comte, get comfortable in our arm-chairs once again, and start theorizing. For only when theorists begin to develop abstract principles and analytical models about invariant and timeless properties of the social universe can sociology hope to cumulate knowledge about human action, interaction, and organization.

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