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978-0-521-37258-9 - The Meaning of General Theoretical Sociology: Tradition and Formalization

Thomas J. Fararo

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Introduction

The central concern of general theoretical sociology is the construction of frameworks and models by means of which generalized sociological problems can be posed and studied. These problems have their roots in those empirical and conceptual problems that pervade all of sociology. They are general problems at the core of our effort to analyze the social world.

The general empirical problems of sociology concern social structures. How do novel social structures emerge? Under what conditions are they stable? How do we compare social structures? How do social structures change? To say that these are general problems is to say that they arise in any and all more specific contexts of sociological analysis whatever the cultural or physical environment, whatever the institutional setting, and whatever the historical period. To pose and work on these problems in a generalized way, the focus shifts from the actual world to abstract and generalized models. But the models are studied from the point of view of what they imply is really possible under varying conditions in the actual world. The concern is with how bare logical possibility, implied in a conceptual scheme, passes over into real possibility as a consequence of principles and mechanisms.

The general conceptual problems arise within the tradition of attempting to provide answers at the same level of generality as the general empirical problems. For example, if social structure is the focus of analysis, what is or should be the role of cultural concepts in our theories? If we say, with Parsons (1977), that social structure is institutionalized normative culture, what do we make of Blau's (1977) decision to eliminate values and norms in formulating macrostructural theory? And how are these two conceptions of social structure related to the idea that in some sense social structure is constituted by social knowledge, modules of tacit rules that account for the forms of situated interaction? And for that matter, if we begin with the primacy of process, as will be the case in this book, what can structure mean and how can we treat it as at once enduring and changing? What relation will this imply between human actors and the structures they generate in interaction?

Such conceptual problems can lead to further theoretical analyses, often of an

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integrative kind, and sometimes to improvements in the body of theory. In addition, such problems suggest a gradual passage into broadly philosophical concerns that must not be put aside as “nonscientific.” Presuppositions as well as concepts, principles, and models are legitimate concerns for sociological theorists.

This book describes and illustrates an outlook on theoretical sociology. This outlook may be termed *generative structuralism*. The volume begins with the statement of a philosophy of general theoretical sociology and then goes on to employ formal means to state and address generalized empirical and conceptual problems. As a whole, the book suggests a philosophy of the field and an implementation of that philosophy leading to a body of principles and theoretical methods that illustrate how, working within a certain presuppositional basis, one is led to certain results. There is no implication that these results are final or ultimate. On the contrary, a basic idea is that by working on problems generated within the *tradition* of the field, both *formalization* and *unification* are operations leading to transformations of theory structures in an incessant recursive process in which we reapply the operations to any state they may have produced. There is no fixity, but there are theoretical structures generated and transformed over time. Indeed, if in this sentence we change the word *theoretical* to *social*, we obtain two different applications of a single process worldview that is a component of the philosophy of general theoretical sociology and characterizes generative structuralism. Thus, this book is one instance of a phase of theoretical sociology that I have called “neoclassical” (Fararo, 1984a), by which I mean a dual commitment to advance the state of generalized theoretical analysis and to do so on a firm classical foundation.

An overview of the contents of the book will serve to provide a brief introduction to the ideas treated.

Chapter 1 states a philosophy of general theoretical sociology. A number of key questions are posed and addressed by making use of philosophical models. The first question is, How shall we think about the history and current state of the field? Drawing upon a general model of science proposed by a historian of science, the answer proposed is that general theoretical sociology is a single comprehensive research tradition containing a number of communicating subtraditions, each with various branches. As in any sociocultural enterprise, there are competitive as well as cooperative elements. According to the general model, any such scientific research tradition implies a corresponding worldview. So the claim that the field can be modeled, descriptively and normatively, as a single tradition suggests a second question: What philosophical model provides an explicit articulation of its worldview? Idealism and materialism, essentially nineteenth-century movements of ideas, were transcended by the philosophers

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involved in the classical sociological breakthrough at the turn of the century. A new worldview was born, a process worldview. One aim of Chapter 1 is to describe this process worldview, which then pervades the entire approach of the book.

The philosophy of general theoretical sociology, as further set out in Chapter 1, involves two other key questions: What form should theory take? What is explanation?

The problem of the form of theory will be treated in terms of two philosophical models of theory structure, positivist and instrumentalist. The former arises from the philosophical tradition of logical positivism as modified in later work. In its most sophisticated form, it offers a vision of theory structure in terms of the mathematical axiomatic method, in which a formal theory defines a category of models and studies families of models in that category. The instrumentalist vision of theory structure arises from nonpositivist philosophical traditions, mainly from pragmatism and from Wittgenstein-inspired analyses. In one of its sophisticated forms, it proposes that theory structure is given by a nondeductive hierarchy of meanings. After these two philosophical models have been set out, a synthesis is stated in which the mathematical axiomatic method constitutes an optional and useful substructure of a four-level nondeductive meaning control hierarchy. The crown of this hierarchy is constituted by a set of nonempirical presuppositions, followed in order by what I call representation principles, theoretical models, and invariants.

The problem of theoretical explanation is treated in an analogous way. Two philosophical models are described. Again, positivism provides one definite model of scientific explanation as necessarily involving a relation of deduction between propositions. An alternative philosophical model has been formulated by non-positivist philosophers, in this case in the realist tradition of the philosophy of science. Some realists stress generative mechanisms; others stress idealized model objects. When the traditional positivist account is modified by reference to the essential role of models, and when we emphasize the importance of generativity in model building, we arrive at a synthesized conception of theoretical explanation.

Given a process worldview and a conception of explanation as involving the construction of generative models, how do we formulate the formal theoretical versions of the main empirical problems of sociology? In short, what form does the framework of general theoretical sociology take?

Chapter 2 provides an answer to this question. The formal aspect of the framework has as its core two types of models: *networks* and *dynamical systems*. A network represents the social units and their interactions, including given and emergent structures of social relations among them. A dynamical system repre-

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sents the relational processes constituting the network, conceived in terms of states and parameters. In the sociological context, we define a model called a general dynamical social system, which incorporates both the network and the dynamical system representations in a sociological interpretation.

Four types of theorems naturally emerge from the formal study of such models. The operative ideal for theorizing that is formulated is that we should aim toward the construction of theoretical models such that we can derive instances of these four types of theorems. They state general answers to four general problems of theoretical sociology: problems concerned with the emergence, the stability, the comparison, and the change of social structures. To the extent that we can obtain such general results, the main aim of general theoretical sociology is attainable. Nowhere in this book, however, is it claimed that such types of theorems are easy to obtain. They define an ideal that guides the theoretical process and can be used to assess how difficult our theoretical tasks are.

By study of the formalization of Homans's theory accomplished by Simon in the early 1950s, an example can be provided of four definite theorems that realize the theorem types. Then some elements of modern nonlinear dynamic analysis are applied to show that we can formally treat "structuration" and "destruction" as (in a technical sense) catastrophes of group process. It will be noted that these are qualitative theorems about the forms of possible outcomes of group process. Although the ideas and techniques of recently developed "chaos science" are not used here, they constitute a logical next step in the spirit of adopting nonlinear dynamical systems as a framework for general theoretical sociology.

The formal theory and four theorems that illustrate the idea of the four key theorem types of general theoretical sociology exhibit two conceptual problems, which are framed at the end of Chapter 2 and provide transition to the two subsequent chapters. One conceptual problem leads to the claim that we require, for the purposes of general theoretical sociology, an action framework in the sense of principles that provide a mode of representation of the generation of action by single actors. This problem requires formal work within action theory. The second conceptual problem leads to the claim that we require, for the purposes of general theoretical sociology, a structuralist framework in the specific sense of a sustained focus on the network aspect of the dynamical social system. These two conceptual points are treated, respectively, in Chapters 3 and 4. The spirit of these chapters is that of making contributions in the two directions, action theory and structuralism, not of providing definitive solutions.

Chapter 3 consists of contributions to action theory, understood much more broadly than usual. Three representation principles are stated and explored conceptually and formally. These relate to and in a sense formalize key components

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of three branches or wings of a broadly understood collection of variants of action theory in sociology. The three branches are analytical action theory, especially the contributions of Parsons; interpretive sociology, a broad set of contributions from such authors as Schutz, Mead, Berger and Luckmann, Blumer, Garfinkel, and Giddens; and the theory of adaptively rational action, which includes the contributions of Homans, Emerson, and Coleman. I am not attempting to formalize extant sociological frameworks as totalities. I am seeking general representation principles, as defined in Chapter 1, implemented in theoretical models of action such that by various procedures one can derive dynamical social interaction system models.

The first branch of action theory treated in Chapter 3 is analytical action theory. Two elements of the theory are studied. The first element is normative control, the second is the AGIL scheme. The element of normative control is treated in terms of a representation principle: The actor in a situation is a dynamical normative control system. From a metatheoretical standpoint, adoption of this principle is a mode of treatment of classical dichotomies (such as voluntarism and constraint) as aspects of a single relational–processual whole. In turn, this leads to two forms of control system models, the first of which is the starting point for the second. The first model is based on a “vertical” coupling of normative control mechanisms to constitute a cybernetic hierarchy generating the behavior of a single actor in a situation. The second model is based on a “horizontal” or social coupling of such cybernetic hierarchy models. The image of social action systems becomes that of a dynamic network of socially coupled hierarchical normative control systems. Thus, a social generator is defined in terms of an action generator. On this basis we are led to a general formulation of the problem of social order. The AGIL scheme is then considered in dynamical system terms. In this context, a general answer to the problem of social order requires a type of theorem that combines two of the theorem types of Chapter 2. Parsons’s work is interpreted as suggesting theorem conjectures about the stability conditions of networks based on social couplings of cybernetic actor models. It is here that the conjectured role of types of common value patterns finds its niche as a substantive contribution to action theory.

In analytical action theory, the values of the actors loom large. In interpretive sociology, the second branch of action theory treated in Chapter 3, it is the social knowledge of the actors that takes this dominant role. The key representation principle is that institutions, as schemes of typification, are regarded as classes of generated normal forms of interaction where the generator is a system of *production rules*. The formalism of production rules is used to represent a variety of ideas of interpretive sociology, including the interpretive procedures of ethnomethodology. What is involved here is a combination of philosophical, socio-

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logical, and formal ideas that together are taken to define what I call structural–generative action theory. Interpretive sociology plus ideas from analytical action theory function as the ingredient sociology. Thus structural–generative theory is integrative in spirit and provides a second mode of representation of ideas of analytical action theory, especially those concerned with the structure of action systems.

The third branch of action theory treated in Chapter 3 is termed the theory of adaptively rational action. There are actually two types of theories here. One theory starts from a rational choice perspective. It treats change of action in terms of a dynamic utility theory involving the actor's effort to increase utility in a small time interval. The coupling of such adaptively rational actors then yields social generativity with emergent social structures. This theory is illustrated but not treated in detail. The other theory starts from a behavioral foundation. The key principle is that action propensities change as a function of the sanction significance of their consequences for the actor. I adopt a dynamic adaptive model, close in spirit to the approach of Homans and Emerson. Then I specify and apply two theoretical procedures: coupling of actor models to define an interaction model and computer-assisted thought experiments on the interaction model to study its properties. The properties of interest are those concerned with the emergence and stability of social structures, that is, with social order.

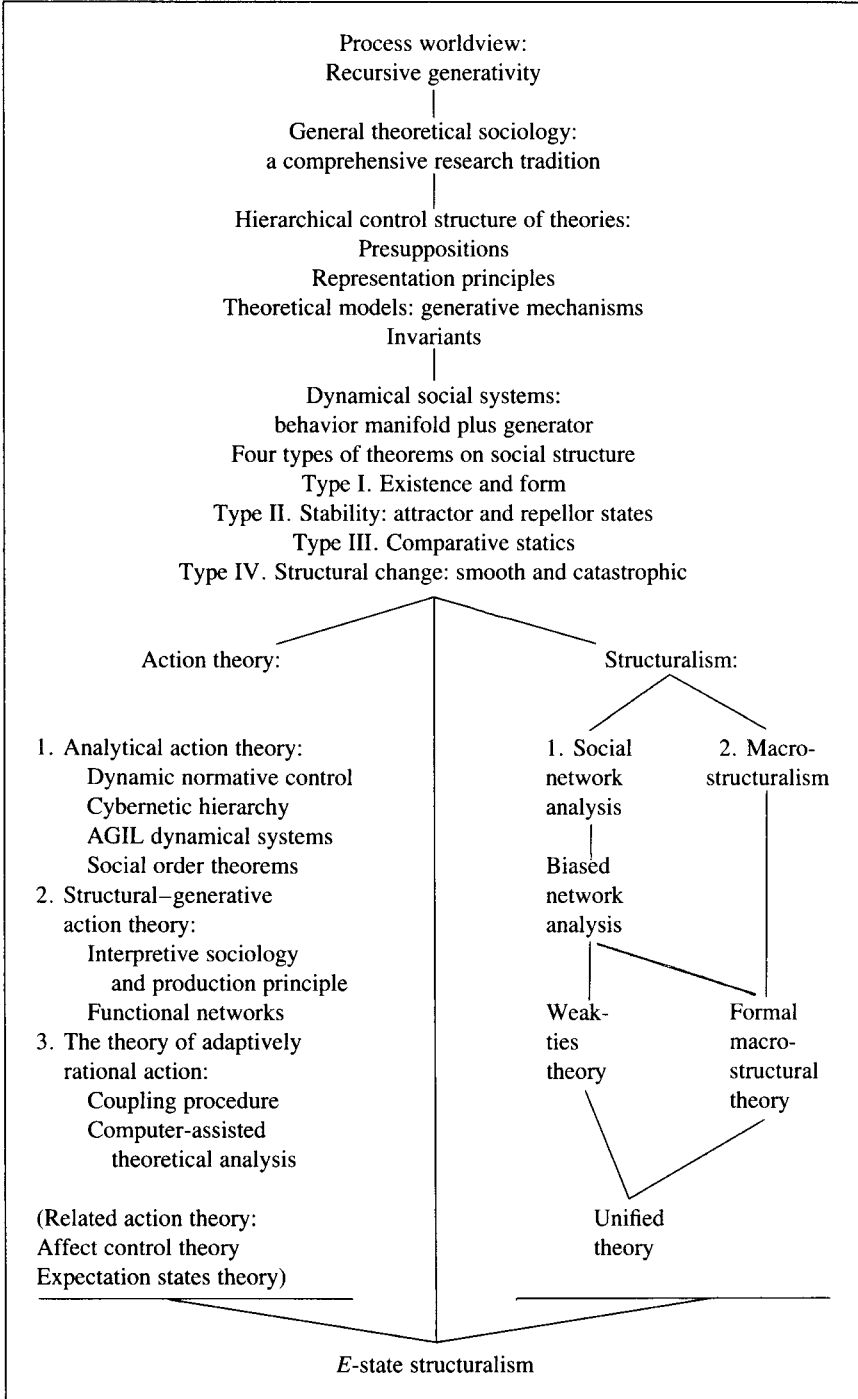
Chapter 4 is a contribution to structuralism. My aim is theoretical, not data analytical. The focus is one of formalization of sociological theories and efforts toward their unification. Network analysis is employed in the form of a biased net framework. Sociological ideas are coordinated to the framework in the role of bias parameters over a baseline random network. Throughout the prior chapters, the reader will have noted that integrative processes and substructures play a crucial role in developing the ideas. In this chapter, a biased network model allows a representation of what is called the “dilemma of integration” of a social system. This dilemma arises in the context of formalizing Granovetter's weak-ties theory. The network conception of integration, as connectivity, is related to the normative conceptions of integration studied in Chapter 3. Then macrostructural theory is formalized and synthesized with weak-ties theory. Thus, we begin with two branches of structuralism: social network analysis and macrostructuralism. But the unification episode shows that theories in these two wings of structuralism can be formally articulated within a common framework, one that preserves the network element while being especially suitable for the analysis of large-scale social systems.

An effort is made to preserve the conception of generativity in treating this biased network mode of formalization and unification, but in general it is true that structuralism has been stronger in its data-analytical than in its explanatory

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achievements. Both at the micro level and the macro level, we need dynamic models that satisfy the presuppositions of structuralism formulated in the introduction to Chapter 4. Although this book does not attempt to spell out any dynamic macrostructural theory, in the very last section of Chapter 4 it does attempt to combine a number of ideas and procedures that focus on dynamics and on structure in the context of a small network. The treatment is in terms of suggesting and actually applying a general theoretical procedure called *E*-state structuralism, an implementation of generative structuralism that combines features of a specific action-theoretical approach with the presuppositions of social network analysis. This is followed by a discussion of how *E*-state structuralism might contribute to further unification within general theoretical sociology.

The book closes with a summary that presents the key ideas in compact outline form.

The chart on page 7 provides a visual overview of the logical structure of the ideas treated. The upper portion shows key topics in Chapters 1 and 2. Then the two branches to action theory and structuralism depict key ideas in Chapters 3 and 4, respectively. The apex of the whole structure is the process worldview, with its conception of a recursively generated actual world exhibiting forms of order. At the bottom of the structure is the theoretical method of *E*-state structuralism, with its convergent relatedness to dynamical social system ideas, theoretical procedures of action theory, and presuppositions of structuralism.

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1. A philosophy of general theoretical sociology

1.1. Introduction

The task of this chapter is to state the main philosophical and metatheoretical elements that form the general presuppositions of generative structuralism, the approach taken in this book. The assumption made is that there is a single time-extended and comprehensive research tradition to which this work aims to be one contribution. This tradition is termed *general theoretical sociology*. Thus, this chapter constitutes a statement of a philosophy of general theoretical sociology.

General theoretical sociology is a research tradition. In fact, I take it to be a *comprehensive* research tradition, within which the familiar paths of sociological theorizing from the classics to the present find their niche. This book both assumes this metasociological proposition and tries to contribute to its further realization. In other words, the claim has normative as well as descriptive significance. It functions both as a premise of the position developed in this book and as a tentative conclusion the work might be seen to make more or less plausible. Research traditions occur within communities of people committed to some more or less articulated *worldview*. This book takes the position that most of the worldviews discussed in contemporary theory, such as idealism or materialism, are simply inadequate as proposed presuppositions of classical theory or contemporary theory. My claim is that the tradition of general theoretical sociology is in fact characterized by what I will call a process metaphysics or worldview. Hence, one task of this chapter is to discuss general theoretical sociology as a comprehensive research tradition with a process philosophical worldview.

General theoretical sociology aims to provide theoretical solutions to a small number of fundamental general problems centered on the concept of social structure, as has been stated earlier and will be elaborated upon in the next chapter. It supplies proposed solutions by constructing frameworks and models based on presuppositions as to what is important and how it should be studied. What I term *representation principles* define frameworks that introduce families of models as modes of representation of social phenomena. Within any one such frame-

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work, the construction of theoretical models leads to statements or *theorems* describing the properties of such models. The properties of interest are those that relate to the solution of general problems motivating the construction of the frameworks and the models.

This process of constructing frameworks and models around certain problems is governed by various *operative ideals* as to the form of theorizing and the nature of explanation. Such operative ideals have been the subject of explicit formulations by philosophers as well as by sociologists. Such explicitly formulated ideals for the form of theorizing and explanation I term *philosophical models* of such activity. Another task of this chapter is to spell out how the conception of general theoretical sociology employed in this book is related to more or less familiar philosophical models of scientific activity, such as those associated with positivism, instrumentalism, and realism.

In Section 1.2, the conception of general theoretical sociology as a comprehensive research tradition is discussed. Section 1.3 formulates two philosophical models of theory structure that, as integrated there, function as a philosophical element in my approach to general theoretical sociology. Section 1.4 formulates two philosophical models of theoretical explanation and, again, provides an integral model that functions as an operative ideal in this book. Section 1.5 treats the process worldview in relation to general theoretical sociology. Then, with this foundation set out, three familiar philosophical issues are taken up in Section 1.6 in order to state explicitly the viewpoint adopted in formulating the generative structuralist approach to theory in sociology. Section 1.7 sums up these ideas.

1.2. General theoretical sociology as a comprehensive research tradition

In this book, contributions are made to a research tradition with many proliferating strands of conceptual schemes and theories. I call it *general theoretical sociology*. In the next chapter, I frame the four central problems of this research tradition and characterize more specifically the aims and procedures it should follow. Anticipating the problem foci: These are the problems of explaining how novel social structures emerge, how given social structures are maintained, how social structures vary with varying cultural or other parameters, and how social structures are transformed over time, either gradually or more abruptly. The procedures to be recommended, based on the philosophical elements explicated later in this chapter, relate to the construction and analysis of theoretical models.

General theoretical sociology is a comprehensive research tradition. What exactly is a research tradition? How can we conceptualize it? According to Lau-