Theories of the Policy Process

Edited by

Paul A. Sabatier
University of California, Davis

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The Need for Better Theories

PAUL A. SABATIER

In the process of public policymaking, problems are conceptualized and brought to government for solution; governmental institutions formulate alternatives and select policy solutions; and those solutions get implemented, evaluated, and revised.

SIMPLIFYING A COMPLEX WORLD

For a variety of reasons, the policy process involves an extremely complex set of elements that interact over time:

1. There are normally hundreds of actors from interest groups, governmental agencies, legislatures at different levels of government, researchers, journalists, and judges involved in one or more aspects of the process. Each of these actors (either individual or corporate) has potentially different values/interests, perceptions of the situation, and policy preferences.

2. This process usually involves time spans of a decade or more, as that is the minimum duration of most policy cycles, from emergence of a problem through sufficient experience with implementation to render a reasonably fair evaluation of a program’s impact (Kirst and Jung 1982; Sabatier and Jenkins-Smith 1993). A number of studies suggest that periods of twenty to forty years may be required to obtain a reasonable understanding of the impact of a variety of socioeconomic conditions and to accumulate scientific knowledge about a problem (Derthick and Quirk 1985; Baumgartner and Jones 1993; Eisner 1993).

3. In any given policy domain, such as air pollution control or health policy, there are normally dozens of different programs involving multiple levels of government that are operating, or are being proposed for operation, in any given locale, such as the state of California or the city
of Los Angeles. Since these programs deal with interconnected subjects and involve many of the same actors, many scholars would argue that the appropriate unit of analysis should be the policy subsystem or domain, rather than a specific governmental program (Hjern and Porter 1981; Ostrom 1983; Sabatier 1986; Rhodes 1988; Jordan 1990).

4. Policy debates among actors in the course of legislative hearings, litigation, and proposed administrative regulations typically involve very technical disputes over the severity of a problem, its causes, and the probable impacts of alternative policy solutions. Understanding the policy process requires attention to the role that such debates play in the overall process.

5. A final complicating factor in the policy process is that most disputes involve deeply held values/interests, large amounts of money, and, at some point, authoritative coercion. Given these stakes, policy disputes seldom resemble polite academic debates. Instead, most actors face enormous temptations to present evidence selectively, to misrepresent the position of their opponents, to coerce and discredit opponents, and generally to distort the situation to their advantage (Riker 1986; Moe 1990a, 1990b; Schlager 1995).

In short, understanding the policy process requires knowledge of the goals and perceptions of hundreds of actors throughout the country involving possibly very technical scientific and legal issues over periods of a decade or more while most of those actors are actively seeking to propagate their specific "spin" on events.

Given the staggering complexity of the policy process, the analyst must find some way of simplifying the situation in order to have any chance of understanding it. One simply cannot look for, and see, everything. Work in the philosophy of science and social psychology has provided persuasive evidence that perceptions are almost always mediated by a set of presuppositions. These perform two critical mediating functions. First, they tell the observer what to look for; that is, what factors are likely to be critically important versus those that can be safely ignored. Second, they define the categories in which phenomena are to be grouped (Kuhn 1970; Lakatos 1971; Brown 1977; Lord, Ross, and Lepper 1979; Hawkesworth 1992; Munro et al. 2002).

To understand the policy process, for example, most institutional rational choice approaches tell the analyst (1) to focus on the leaders of a few critical institutions with formal decisionmaking authority, (2) to assume that these actors are pursuing their material self-interest (e.g., income, power, security), and (3) to group actors into a few institutional categories, for example, legislatures, administrative agencies, and interest groups (Shepsle 1988; Scharpf 1997). In contrast, the advocacy coalition framework tells the analyst to assume (1) that belief systems are more important than institutional affiliation, (2) that actors may be pursuing a wide variety of objectives, which must be measured empirically, and (3) that one must add researchers and journalists to the set of potentially important policy actors (Sabatier and Jenkins-Smith 1993). Thus, analysts from these two different perspectives look at the same situation through quite different lenses and are likely to see quite different things, at least initially.

**STRATEGIES FOR SIMPLIFICATION**

Given that we have little choice but to look at the world through a lens consisting of a set of simplifying presuppositions, at least two quite different strategies exist for developing such a lens. On the one hand, the analyst can approach the world in an implicit, ad hoc fashion, using whatever categories and assumptions that have arisen from his or her experience. This is essentially the method of common sense. It may be reasonably accurate for situations important to the analyst's welfare in which she or he has considerable experience. In such situations, the analyst has both the incentive and the experience to eliminate clearly invalid propositions. Beyond that limited scope, the commonsense strategy is likely to be beset by internal inconsistencies, ambiguities, erroneous assumptions, and invalid propositions, precisely because the strategy does not contain any explicit methods of error correction. Since its assumptions and propositions remain implicit and largely unknown, they are unlikely to be subjected to serious scrutiny. The analyst simply assumes they are, by and large, correct—insofar as he or she is even cognizant of their content.

An alternative strategy is that of science. Its fundamental ontological assumption is that a smaller set of critical relationships underlies the bewildering complexity of phenomena. For example, a century ago Darwin provided a relatively simple explanation—summarized under the processes of natural selection—for the thousands of species he encountered on his voyages. The critical characteristics of science are that (1) its methods of data acquisition and analysis should be presented in a sufficiently public manner that they can be replicated by others; (2) its concepts and propositions should be clearly defined and logically consistent and should give rise to empirically falsifiable hypotheses; (3) those propositions should be as general as possible and should explicitly address relevant uncertainties; and (4) both the methods and concepts should be self-consciously subjected to criticism and evaluation by experts in that field (Nagel 1961; Lave and March 1975; King, Keohane, and Verba 1994). The overriding strategy can be summarized in the injunction: Be clear enough to be proven wrong. Unlike "common sense," science is designed to be self-consciously error seeking, and thus self-correcting.

A critical component of that strategy—derived from principles 2–4 above—is that scientists should develop clear and logically interrelated sets of propositions, some of them empirically falsifiable, to explain fairly general sets of phenomena. Such coherent sets of propositions have traditionally been termed theories.
Elinor Ostrom has developed some very useful distinctions among three different sets of propositions (see Chapter 2 of this volume). (1) In her view, a "conceptual framework" identifies a set of variables and the relationships among them that presumably account for a set of phenomena. The framework can provide anything from a modest set of variables to something as extensive as a paradigm. It need not identify directions among relationships, although more developed frameworks will certainly specify some hypotheses. (2) A "theory" provides a denser and more logically coherent set of relationships. It applies values to some of the variables and usually specifies how relationships may vary depending upon the values of critical variables. Numerous theories may be consistent with the same conceptual framework. (3) A "model" is a representation of a specific situation. It is usually much narrower in scope, and more precise in its assumptions, than the underlying theory. Ideally, it is mathematical. Thus, frameworks, theories, and models can be conceptualized as operating along a continuum involving increasing logical interconnectedness and specificity but decreasing scope.

One final point: Scientists should be aware of, and capable of applying, several different theoretical perspectives—not just a single one (Stinchcomb 1968; Laehle 1987). First, knowledge of several different perspectives forces the analyst to clarify differences in assumptions across frameworks, rather than implicitly assuming a given set. Second, multiple perspectives encourage the development of competing hypotheses that should ideally lead to "strong inference" (Platt 1964), or at least to the accumulation of evidence in favor of one perspective over another. Third, knowledge and application of multiple perspectives should gradually clarify the conditions under which one perspective is more useful than another. Finally, multiple perspectives encourage a comparative approach: Rather than asking if theory X produces statistically significant results, one asks whether theory X explains more than theory Y.

Consistent with this multiple-lens strategy, the original edition of this volume discussed seven conceptual frameworks. A few of them—notably, institutional rational choice—have given rise to one or more theories, and virtually all have spawned a variety of models seeking to explain specific situations.

THEORETICAL FRAMEWORKS OF THE POLICY PROCESS

The Stages Heuristic

Until the mid-1980s, the most influential framework for understanding the policy process—particularly among American scholars—was the "stages heuristic," or what Nakamura (1987) termed the "textbook approach." As developed by Lasswell (1956), Jones (1970), Anderson (1975), and Brewer and deLeon (1983), it divided the policy process into a series of stages—usually agenda setting, policy formulation and legitimation, implementation, and evaluation—and discussed some of the factors affecting the process within each stage. The stages heuristic served a useful purpose in the 1970s and early 1980s by dividing the very complex policy process into discrete stages and by stimulating some excellent research within specific stages—particularly agenda setting (Cobb, Ross, and Ross 1976; Kingdon 1984; Nelson 1984) and policy implementation (Pressman and Wildavsky 1973; Hjern and Hull 1982; Mazmanian and Sabatier 1983).

Beginning in the late 1980s, however, the stages heuristic was subjected to some devastating criticisms (Nakamura 1987; Sabatier 1991; Sabatier and Jenkins-Smith 1993):

1. It is not really a causal theory since it never identifies a set of causal drivers that govern the policy process within and across stages. Instead, work within each stage has tended to develop on its own, almost totally without reference to research in other stages. In addition, without causal drivers there can be no coherent set of hypotheses within and across stages.

2. The proposed sequence of stages is often descriptively inaccurate. For example, evaluations of existing programs affect agenda setting, and policy formulation/legitimation occurs as bureaucrats attempt to implement vague legislation (Nakamura 1987).

3. The stages heuristic has a very legalistic, top-down bias in which the focus is typically on the passage and implementation of a major piece of legislation. This focus neglects the interaction of the implementation and evaluation of numerous pieces of legislation—none of them preeminent—within a given policy domain (Hjern and Hull 1982; Sabatier 1986).

4. The assumption that there is a single policy cycle focused on a major piece of legislation oversimplifies the usual process of multiple, interacting cycles involving numerous policy proposals and statutes at multiple levels of government. For example, abortion activists are currently involved in litigation in the federal courts and most state courts, in new policy proposals in Washington and most of the states, in the implementation of other proposals at the federal and state levels, and in the evaluation of all sorts of programs and proposed programs. They're also continually trying to affect the conceptualization of the problem. In such a situation—which is common—focusing on "a policy cycle" makes very little sense.

The conclusion seems inescapable: The stages heuristic has outlived its usefulness and needs to be replaced with better theoretical frameworks.

MORE PROMISING THEORETICAL FRAMEWORKS

Fortunately, over the past twenty years a number of new theoretical frameworks of the policy process have been either developed or extensively modified. The 1999
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is extremely broad in scope and has been applied to important policy problems in the United States and other countries (Ostrom 1986, 1990; Ostrom, Schroeder, and Wynne 1993; Ostrom, Gardner, and Walker 1994; Scholz, Twombley, and Herbeck 1991; Chubb and Moe 1990; Dowding 1995; Scharpf 1997). It is clearly the most developed of all the frameworks in this volume and is arguably the most utilized in the United States and perhaps in Germany. Elinor Ostrom agreed to write the chapter for this volume.

Multiple-Streams. The multiple-streams framework was developed by John Kingdon (1984) based upon the “garbage can” model of organizational behavior (Cohen, March, and Olsen 1972). It views the policy process as composed of three streams of actors and processes: a problem stream consisting of data about various problems and the proponents of various problem definitions; a policy stream involving the proponents of solutions to policy problems; and a politics stream consisting of elections and elected officials. In Kingdon’s view, the streams normally operate independently of each other, except when a “window of opportunity” permits policy entrepreneurs to couple the various streams. If the entrepreneurs are successful, the result is major policy change. Although the multiple-streams framework is not always as clear and internally consistent as one might like, it appears to be applicable to a wide variety of policy arenas and was cited about eighty times annually in the Social Science Citation Index. John Kingdon is the obvious author for this chapter; however, he declined. I then selected Nikolaos Zahariadis, who had utilized the multiple-streams framework extensively in his own research (Zahariadis 1990, 1995, 2003).

Punctuated-Equilibrium Framework. Originally developed by Baumgartner and Jones (1993), the punctuated-equilibrium (PE) framework argues that policymaking in the United States is characterized by long periods of incremental change punctuated by brief periods of major policy change. The latter come about when opponents manage to fashion new “policy images” and exploit the multiple policy venues characteristic of the United States. Originally developed to explain changes in legislation, this framework has been expanded to include some very sophisticated analyses of long-term changes in the budgets of the federal government (Jones, Baumgartner, and True 1998). The PE framework clearly meets all four criteria, at least for systems with multiple policy venues. The chapter for this volume is coauthored by its original proponents, Frank R. Baumgartner and Bryan D. Jones, together with James L. True.

The Advocacy Coalition Framework. Developed by Sabatier and Jenkins-Smith (1988, 1993), the advocacy coalition framework (ACF) focuses on the interaction of advocacy coalitions—each consisting of actors from a variety of institutions who share a set of policy beliefs—within a policy subsystem. Policy change is a function of both competition within the subsystem and events outside
the subsystem. The framework spends a lot of time mapping the belief systems of policy elites and analyzing the conditions under which policy-oriented learning across coalitions can occur. It has stimulated considerable interest throughout the countries of the Organization for Economic Cooperation and Development (OECD)—including some very constructive criticism (Schlager 1995). Paul Sabatier and Hank C. Jenkins-Smith are clearly qualified to assess the implications of these recent applications.

The frameworks discussed thus far have all focused on explaining policy change within a given political system or set of institutional arrangements (including efforts to change those arrangements). The next two frameworks seek to provide explanations of variation across a large number of political systems.

Policy Diffusion Framework. The policy diffusion framework was developed by Berry and Berry (1990, 1992) to explain variation in the adoption of specific policy innovations, such as a lottery, across a large number of states (or localities). It argues that adoption is a function of both the characteristics of the specific political systems and a variety of diffusion processes. Recently, Mintrom and Vergari (1998) integrated this framework with the literature on policy networks. The diffusion framework has thus far been utilized almost exclusively in the United States. It should, however, apply to variation among countries or regions within the European Union, the OECD, or any other set of political systems. The authors of the chapter in this volume were Frances Stokes Berry and William D. Berry, the original developers of the framework.

The Funnel of Causality and Other Frameworks in Large-N Comparative Studies. Finally, we turn to a variety of frameworks that were extremely important in the United States in the 1960s and 1970s in explaining variation in policy outcomes (usually budgetary expenditures) across large numbers of states and localities (Dye 1966, 1991; Sharkansky 1970; Hofferbert 1974). These began as very simple frameworks seeking to apportion the variance among background socioeconomic conditions, public opinion, and political institutions—although they became somewhat more sophisticated over time (Mazmanian and Sabatier 1981; Hofferbert and Urice 1985). Although interest in this approach has declined somewhat in the United States, it is still popular in OECD countries, particularly for explaining variation in social welfare programs (Flora 1986; Klingeman, Hofferbert, and Budge 1994; Schmidt 1996). The author for this chapter is William Blomquist. Although he has contributed to this literature (Blomquist 1991), he is not a major proponent—and thus differs from all the other chapter authors. He was selected because I expected him to be critical of the “black box” features of this framework and to seek to integrate it with other literatures, particularly institutional rational choice. Although those expectations were never communicated to him, he wound up doing a superb job of fulfilling them.

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WHAT'S NEW IN THE SECOND EDITION?

The first (1999) edition of this book has been quite successful. It has sold about 1,000 copies per year for seven years. It has generally received favorable reviews (Dudley 2000; Parsons 2000; Radaelli 2001; Skogstad 2001; Theodoulou 2001). It has substantially accomplished what it set out to do: namely, to provide first-rate introductions to a set of the most promising theories of the policy process, together with some insightful comparisons.

Nevertheless, the first edition has been subjected to at least two major criticisms. First, it has been justly taken to task for its “overwhelming focus on the American literature” (Skogstad 2001). All of the authors were American. The only chapter that referenced a significant non-American literature was Ostom, whose IAD framework has largely been used in developing countries. Several of the chapters—particularly those covering the ACF and punctuated equilibrium—implicitly assumed that the basic features of American pluralism (multiple venues, majoritarian rule, weak political parties, politicized bureaucracies) were the norm everywhere. There was no acknowledgment of corporatist and authoritarian regimes, which are prevalent in many European and developing countries.

Second, the first edition was criticized for its narrow selection criteria, particularly for only including frameworks that followed scientific norms of clarity, hypothesis-testing, acknowledgment of uncertainty, etc. Since I am unequivocally a social scientist, this criticism fell on deaf ears (Sabatier 2000). A related criticism was that the first edition ignored social constructionist frameworks, largely on grounds that they don’t follow scientific norms. But Helen Ingram and Anne Schneider convinced me that their particular constructionist framework (Schneider and Ingram 1997) met those norms and thus ought to be included in the book.

The second edition addresses these criticisms in a number of ways. In reaction to the charge of American chauvinism, the new edition:

- Adds a new chapter on network analysis written by two Europeans, Hanspeter Kriesi and Silke Adam of the University of Zurich. They were selected over possible competitors (e.g., Knoke and Laumann) because their concepts and arguments are clearer.
- Adds new chapters on network analysis and social construction, both of which are very prominent topics in the European and Commonwealth literature.
- Revises several chapters—particularly those covering the ACF and PE—to no longer assume American pluralism as the norm. Most other chapters increased their coverage of the non-American literature.

As for the neglect of social construction, the new edition adds a chapter on that topic by Ingram and Schneider.
Given my doubts about the utility of the stages heuristic and the need to find space for two more promising frameworks, the chapter on the stages heuristic has been deleted from the second edition.

Finally, since one indicator of a viable research program is evidence that scholars beyond those who initiate the program expand it to other contexts, I have encouraged contributors to this volume to include in their chapter a table or appendix listing published studies employing the model/framework in different situations. Most of the authors have chosen to do so, although the format utilized varies substantially from chapter to chapter.

PLAN OF THE BOOK

With respect to each of the eight theoretical frameworks selected for discussion, I have asked one of its principal proponents to present a brief history, to discuss its underlying principles and propositions, to analyze recent empirical evidence and revisions, to evaluate the strengths and limitations of the framework, and to suggest directions for future development.

After this introductory chapter, the next major section contains analyses of three frameworks that differ substantially concerning their assumptions of individual and collective rationality. Institutional rational choice frameworks assume that policy actors are "intendedly rational"; that is, they seek to realize a few goals efficiently but must overcome some obstacles (including imperfect information) to do so. The assumption is that policy problems and options are relatively well defined, but ascertaining the probable consequences of those alternatives is problematic. In contrast, Kingdon's multiple-streams model assumes that most policy situations are cloaked in "ambiguity," that is, lacking clear problem definitions and goals. In addition, serendipity and chance play a major role in the multiple-streams framework. In the Ingram and Schneider social construction approach, actors' perceptions of reality are strongly influenced by "social constructions" of the worthiness (virtue) and power of various target populations.

The third section presents three frameworks that seek to explain policy change over fairly long periods of time within a policy subsystem/domain: the punctuated-equilibrium framework of Jones et al., the advocacy coalition framework of Sabatier et al., and the policy network analysis of Kriese et al. Although these three frameworks have similar dependent variables, they differ in several respects—most notably, in the relative importance of the general public versus policy elites, the model of the individual, and the importance of institutional context.

The fourth section contains two frameworks that typically seek to explain variation in policy decisions across large numbers of political systems. I had considered combining these into a single chapter but decided against it for two reasons. First, the diffusion models discussed by Berry and Berry are really a significant addition to the traditional set of state/local system variables discussed by Sharkansky/Dye/Hofferbert. Second, I very much wanted to have a critique of the "black box" character of the Sharkansky et al. models on the record, which I knew I could count on from Blomquist.

The final section contains two concluding chapters. The first is a comparison of the various theoretical frameworks, including comparisons of their dependent variables, the critical independent variables, the strengths and weaknesses of each, and some speculations about how they might be integrated and/or more clearly differentiated. The author is Edella Schlager, who has already revealed herself to be extremely talented at this sort of comparative analysis (Schlager 1995; Schlager and Blomquist 1996). In the last chapter, I suggest several strategies for advancing the state of policy theory.

The goal of this book is to advance the state of policy theory by presenting several of the more promising frameworks and by inviting the reader to compare the strengths and limitations of each. At the end of the day, the reader will hopefully have a repertoire of two or three frameworks that she or he is familiar with and adept at employing.

NOTES

1. Just to show that my tastes are not totally idiosyncratic, the list of "synthetic theories" developed by Peter John (1998) includes the advocacy coalition framework, punctuated equilibrium, and multiple streams. Earlier in the book, he includes socioeconomic approaches, institutions, rational choice, and ideas. I have grouped most of the last into a constructivist paradigm in the next section. My list also overlaps considerably those of Parsons (1996) and Muller and Sørenson (1998).

2. For example, in Knoke et al. (1996) "interest" is used both for "a topic of concern" and in "core interest" (p.13). In addition, the critical discussion of organization interests in specific settings (pp. 25-22) is quite confusing. In contrast, Kriese's work (Kriese and Jegen 2001) is very clear.

3. I wish to thank Bill Berry for clarifying this argument.

REFERENCES

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PART TWO

Alternative Views of the Role of Rationality in the Policy Process
Institutional Rational Choice

An Assessment of the Institutional Analysis and Development Framework

ELINOR OSTROM

When Paul Sabatier asked me to do an assessment of institutional rational choice, I responded that the field was too big for one person to do an assessment of all the work that might be covered by the term. Instead of trying an assessment of such a broad array of literature, I focus more specifically on the institutional analysis and development (IAD) framework that has evolved out of the work of many colleagues at the Workshop in Political Theory and Policy Analysis at Indiana University. Undertaking an overview and assessment of the IAD framework proves to be quite a challenge in 2006 given all of the attention paid to it in recent years.

The publication of “The Three Worlds of Action: A Metatheoretical Synthesis of Institutional Approaches” (Kiser and Ostrom 1982) represents the initial published attempt to develop a general framework to help integrate work undertaken by political scientists, economists, anthropologists, geographers, lawyers, social psychologists, and others interested in how institutions affect the incentives confronting individuals and their resultant behavior. During the two plus decades since this publication, the framework has been further developed and applied to the analysis of a diversity of empirical settings (see Table 2.1). After many requests, I have finally devoted an entire book to explication of the full framework as it has developed over the years (E. Ostrom 2005). The elements involved in the framework are closely related to concepts that play an important role in related theories, such as those represented in the work of Douglass C.
North, Oliver Williamson, and others in the "new institutional economics" tradition (see Eggertsson 1990, 2005).

Two important aspects of the IAD framework were developed in the initial article with Larry Kiser. One aspect is the distinction among three tiers of decision making and the relations among them: constitutional, collective choice, and operational decisions. The second is the elucidation of the fundamental elements that can be used for analysis of outcomes and their evaluation at any of the three tiers of decision making. In this chapter, I will present an updated version of the framework in light of the additional work undertaken since 1982 and of theories and models consistent with this framework. I will conclude with a brief assessment of the utility of this tool for institutional analysis. Before I do this, however, I wish to indicate some of the difficulties that confront those interested in understanding incentives, institutions, and outcomes.

CHALLENGES

Various aspects of the IAD approach are clarified by becoming aware of the difficulties to be overcome in undertaking any form of institutional analysis. Here is an initial list of what I consider the key difficulties involved in studying institutions:

1. The term "institution" refers to many different types of entities, including both organizations and the rules used to structure patterns of interaction within and across organizations.
2. Although the buildings in which organized entities are located are quite visible, institutions themselves are invisible.
3. To develop a coherent approach to studying diverse types of institutional arrangements, including markets, hierarchies, firms, families, voluntary associations, national governments, and international regimes, one needs multiple inputs from diverse disciplines.
4. Given the multiple languages used across disciplines, a coherent institutional framework is needed to allow for expression and comparison of diverse theories and models of theories applied to particular puzzles and problem settings.
5. Decisions made about rules at any one level are usually made within a structure of rules existing at a different level. Thus, institutional studies need to encompass multiple levels of analysis.
6. At any one level of analysis, combinations of rules, attributes of the world, and communities of individuals involved are combined in a configurational rather than an additive manner.

Let us briefly discuss these issues before turning to the IAD approach.

Institutional Rational Choice

Multiple Definitions of Institutions

It is hard to make much progress in the study of institutions if scholars define the term "institution" as meaning almost anything. A major confusion exists between scholars who use the term to refer to an organizational entity such as the U.S. Congress, a business firm, a political party, or a family, and scholars who use the term to refer to the rules, norms, and strategies adopted by individuals operating within or across organizations. In this chapter, I will use the term "institution" in the latter sense, to refer to the shared concepts used by humans in repetitive situations organized by rules, norms, and strategies (see Crawford and Ostrom 2005). By rules, I mean shared prescriptions (must, must not, or may) that are mutually understood and predictably enforced in particular situations by agents responsible for monitoring conduct and for imposing sanctions. By norms, I mean shared prescriptions that tend to be enforced by the participants themselves through internally and externally imposed costs and inducements. By strategies, I mean the regularized plans that individuals make within the structure of incentives produced by rules, norms, and expectations of the likely behavior of others in a situation affected by relevant physical and material conditions.

Invisibility of Institutions

One of the most difficult problems to overcome in the study of institutions is how to identify and measure them. Because institutions are fundamentally shared concepts, they exist in the minds of the participants and sometimes are shared as implicit knowledge rather than in an explicit and written form. One of the problems facing scholars and officials is learning how to recognize the presence of institutions on the ground. The primitive physical structures that embed property-rights systems that farmers have constructed over time look flimsy to an engineer who considers real only structures built out of concrete and iron. These flimsy structures, however, are frequently used by individuals to allocate resource flows to participants according to rules that have been devised in tough constitutional and collective-choice bargaining situations over time.

In training researchers to identify and measure institutions, we stress the concept of rules-in-use rather than focusing on rules-in-form. Rules-in-use are referred to whenever someone new (such as a new employee or a child) is being socialized into an existing rule-ordered system of behavior. They are the dos and don'ts that one learns on the ground that may not exist in any written document. In some instances, they may actually be contrary to the dos and don'ts written in formal documents. Being armed with a set of questions concerning how X is done here and why Y is not done here is a very useful way of identifying rules-in-use, shared norms, and operational strategies.
Multiple Disciplines—Multiple Languages

Because regularized human behavior occurs within a wide diversity of rule-ordered situations that share structural features such as markets, hierarchies or firms, families, voluntary associations, national governments, and international regimes, no single discipline addresses all questions important for the study of human institutions. Understanding the kinds of strategies and heuristics that humans adopt in diverse situations is enhanced by the study of anthropology, economics, game theory, history, law, philosophy, political science, psychology, public administration, and sociology. Scholars within these disciplines learn separate technical languages. Meaningful communication across the social sciences can be extremely difficult to achieve (E. Ostrom 2006). When social scientists need to work with biologists and/or physical scientists, communication problems are even more difficult. One of the reasons for developing the IAD framework has been, therefore, to develop a common set of linguistic elements that can be used to analyze a wide diversity of problems.

Multiple Levels of Analysis

When individuals interact in repetitive settings, they may be in operational situations that directly affect the world, or they may be making decisions at other levels of analysis that eventually impinge on operational decision-making situations (Sheple 1989). Multiple sources of structure are located at diverse analytical levels as well as diverse geographic domains. Biologists took several centuries to learn how to separate the diverse kinds of relevant structures needed to analyze both communities and individual biological entities. Separating phenotypical structure from genotypical structure was part of the major Darwinian breakthrough that allowed biologists to achieve real momentum and cumulation during the past century. The nested structure of rules within rules, within still further rules, is a particularly difficult analytical problem to solve for those interested in the study of institutions. Studies conducted at a macro level (see Kaminski 1992; V. Ostrom 1997; Allen 2005; Loveman 1993; Sawyer 1992, 2005) focus on constituential structures. These affect collective-choice decisions as they eventually impinge on the day-to-day decisions of citizens and/or subjects. Studies conducted at a micro level (Firmin-Sellers 1996; Gibson, Williams, and Ostrom 2005) focus more on operational-level decisions as they are, in turn, affected by collective-choice and constitutional-choice rules, some, but not all, of which are under the control of those making operational decisions. Finding ways to communicate across these levels is a key challenge for all institutional theorists.

Configural Relationships

Successful analysis can cumulate rapidly when scholars have been able to examine a problem by separating it into component parts that are analyzed independently and then recombin ing these parts additively. Many puzzles of interest to social scientists can be torn apart and recombined. Frequently, however, the impact on incentives and behavior of one type of rule is not independent of the configuration of other rules. Thus, the impact of changing one of the current rules that is part of a "welfare system" depends on which other rules are also in effect. Changing the minimum outside income that one can earn before losing benefits from one program, for example, cannot be analyzed independently of the effect of income on benefits derived from other programs. Similarly, analyzing the impact of changing the proportion of individuals who must agree prior to making an authoritative collective choice (e.g., 50 percent plus one) depends on the quorum rule in force. If a quorum rule specifying a low proportion of members is in effect, requiring two-thirds agreement may be less stringent decision rule than a simple majority rule combined with a quorum rule requiring a high proportion of members. Ceteris paribus conditions are always essential for doing any theoretical work involving institutions. In the case of institutional analysis, one needs to know the value of other variables rather than simply asserting that they are held constant. This configural nature of rules makes institutional analysis a more difficult and complex enterprise than studies of phenomena that are strictly additive.

INSTITUTIONAL FRAMEWORKS, THEORIES, AND MODELS

Given the need for multiple disciplines, and hence multiple disciplinary languages, and given the multiple levels of analysis involved in studying configural relationships among rules, relevant aspects of the world, and cultural phenomena, the study of institutions does depend on theoretical work undertaken at three levels of specificity that are often confused with one another. These essential foundations are (1) frameworks, (2) theories, and (3) models. Analyses conducted at each level provide different degrees of specificity related to a particular problem.

The development and use of a general framework helps to identify the elements and relationships among these elements that one needs to consider for institutional analysis. Frameworks organize diagnostic and prescriptive inquiry. They provide the most general list of variables that should be used to analyze all types of institutional arrangements. Frameworks provide a metatheoretical language that can be used to compare theories. They attempt to identify the universal elements that any theory relevant to the same kind of phenomena would need to include. Many differences in surface reality can result from the way these variables combine or interact with one another. Thus, the elements contained in a framework help analysts generate the questions that need to be addressed when they first conduct an analysis.

The development and use of theories enable the analyst to specify which elements of the framework are particularly relevant to certain kinds of questions and to make general working assumptions about these elements. Thus, theories focus on a framework and make specific assumptions that are necessary for an analyst to diagnose a phenomenon, explain its processes, and predict outcomes. Several
theories are usually compatible with any framework. Economic theory, game theory, transaction cost theory, social choice theory, covenantal theory, and theories of public goods and common-pool resources are all compatible with the IAD framework discussed in this chapter. In this chapter, I illustrate the framework primarily with reference to our work on the theory of common-pool resources.

The development and use of models make precise assumptions about a limited set of parameters and variables. Logic, mathematics, game theory, experimentation and simulation, and other means are used to explore systematically the consequences of these assumptions in a limited set of outcomes. Multiple models are compatible with most theories. An effort to understand the strategic structure of the games that irrigators play in differently organized irrigation systems, for example, developed four families of models just to begin to explore the likely consequences of different institutional and physical combinations relevant to understanding how successful farmer organizations arranged for monitoring and sanctioning activities (Weissing and Ostrom 1991). This is one of the models we have developed for the precise analysis of a subpart of the theory of common-pool resources.

For policymakers and scholars interested in issues related to how different governance systems enable individuals to solve problems democratically, the IAD framework helps to organize diagnostic, analytical, and prescriptive capabilities. It also aids in the accumulation of knowledge from empirical studies and in the assessment of past efforts at reforms. Markets and hierarchies are frequently presented as fundamentally different “pure types” of organization. Not only are these types of institutional arrangements perceived to be different, but each is presumed to require its own explanatory theory. Scholars who attempt to explain behavior within markets use microeconomic theory, whereas scholars who attempt to explain behavior within hierarchies use political and sociological theory. Such a view precludes a more general explanatory framework and closely related theories that help analysts make cross-institutional comparisons and evaluations.

Without the capacity to undertake systematic, comparative institutional assessments, recommendations of reform may be based on naive ideas about which kinds of institutions are “good” or “bad” and not on an analysis of performance. One needs a common framework and family of theories to address questions of reforms and transitions. Particular models then help the analyst deduce specific predictions about likely outcomes of highly simplified structures. Models are useful in policy analysis when they are well tailored to the particular problem at hand. Models can be used inappropriately when applied to the study of problematic situations that do not closely fit the assumptions of the model.

THE INSTITUTIONAL ANALYSIS AND DEVELOPMENT FRAMEWORK
As indicated earlier, an institutional framework should identify the major types of structural variables present to some extent in all institutional arrangements,
The first step in analyzing a problem is to identify a conceptual unit—called an action arena—that can be utilized to analyze, predict, and explain behavior within institutional arrangements. Action arenas include an action situation and the actors in that situation. An action situation can be characterized by means of seven clusters of variables: (1) participants, (2) positions, (3) outcomes, (4) action-outcome linkages, (5) the control that participants exercise, (6) information, and (7) the costs and benefits assigned to outcomes. An actor (an individual or a corporate actor) includes assumptions about four clusters of variables:

1. the resources that an actor brings to a situation;
2. the valuation actors assign to states of the world and to actions;
3. the way actors acquire, process, retain, and use knowledge contingencies and information; and
4. the processes actors use for selection of particular courses of action.

The term action arena refers to the social space where individuals interact, exchange goods and services, solve problems, dominate one another, or fight (among the many things that individuals do in action arenas). A major proportion of theoretical work stops at this level and takes as given the variables specifying the situation and the motivational and cognitive structure of an actor. Analysis proceeds toward the prediction of the likely behavior of individuals in such a structure.

An institutional analyst can take two additional steps after making an effort to understand the initial structure of an action arena. One step digs deeper and inquires into the factors that affect the structure of an action arena. From this vantage point, the action arena is viewed as a set of variables dependent upon other factors. These factors affecting the structure of an action arena include three clusters of variables: (1) the rules used by participants to order their relationships, (2) the attributes of states of the world that are acted upon in these arenas, and (3) the structure of the more general community within which any particular arena is placed (see Kiser and Ostrom 1982). The next section of this chapter explicitly examines how shared understandings of rules, states of the world, and nature of the community affect the values of the variables characterizing action arenas. Then one can move outward from action arenas to consider methods for explaining complex structures that link sequential and simultaneous action arenas to one another (see the left side of Figure 2.1).

DIAGNOSIS AND EXPLANATION WITHIN THE FRAME OF AN ACTION ARENA

As mentioned earlier, the term “action arena” refers to a complex conceptual unit containing one set of variables called an action situation and a second set of variables called an actor. One needs both components—the situation and the actors in the situation—to diagnose, explain, and predict actions and results.

An Action Situation

The term “action situation” is used to refer to an analytic concept that enables an analyst to isolate the immediate structure affecting a process of interest for the purpose of explaining regularities in human actions and results, and potentially to reform them. A common set of variables used to describe the structure of an action situation includes (1) the set of participants, (2) the specific positions to be filled by participants, (3) the set of allowable actions and their linkage to outcomes, (4) the potential outcomes that are linked to individual sequences of actions, (5) the level of control each participant has over choice, (6) the information available to participants about the structure of the action situation, and (7) the costs and benefits—which serve as incentives and deterrents—assigned to actions and outcomes. In addition, whether a situation will occur once, a known finite number of times, or indefinitely affects the strategies of individuals. When one is explaining actions and cumulated results within the framework of an action arena, these variables are the “givens” that one works with to describe the structure of the situation. These are the common elements used in game theory to construct formal game models.

Most operational activities related to natural resources can be conceptualized as involving provision, production, appropriation, and assignment (see E. Ostrom, Gardner, and Walker 1994; E. Ostrom, Schroeder, and Wynne 1993). In an analysis of appropriation problems concerning overharvesting from a common-pool resource situation, for example, answers to the following questions are needed before analysis:

- The set of participants: Who and how many individuals withdraw resource units (e.g., fish, water, fodder) from this resource system?
- The positions: What positions exist (e.g., members of an irrigation association, water distributors—guards, and a chair)?
- The set of allowable actions: Which types of harvesting technologies are used (e.g., are chainsaws used to harvest timber; are there open and closed seasons; do fishers return fish smaller than some limit to the water)?
- The potential outcomes: What geographic region and what events in that region are affected by participants in these positions? What chain of events links actions to outcomes?
- The level of control over choice: Do appropriators take the above actions on their own initiative, or do they confer with others (e.g., before entering the forest to cut fodder, does an appropriator obtain a permit)?
The information available: How much information do appropriators have about the condition of the resource itself, about other appropriators’ cost and benefit functions, and about how their actions cumulate into joint outcomes?

The costs and benefits of actions and outcomes: How costly are various actions to each type of appropriator, and what kinds of benefits can be achieved as a result of various group outcomes?

The Actor: Theories and Models of the Individual

The actor in a situation can be thought of as a single individual or as a group functioning as a corporate actor. The term “action” refers to those human behaviors to which the acting individual attaches a subjective and instrumental meaning. All analysts of microbehavior use an implicit or explicit theory or model of the actors in situations to derive inferences about the likely behavior of each actor in a situation (and thus about the pattern of joint results that may be produced). The analyst must make assumptions about how and what participants value; what resources, information, and beliefs they have; what their information-processing capabilities are; and what internal mechanisms they use to decide upon strategies.

For many problems, it is useful to accept the classical political economy view that an individual’s choice of strategy in any particular situation depends on how he or she perceives and weighs the benefits and costs of various strategies and their likely outcomes (Radnitzky 1987). The most well-established formal model of the individual used in institutional analysis is Homo economicus as developed in neoclassical economics and game theory. To use Homo economicus, one assumes that actors have complete and well-ordered preferences and complete information, and that they maximize the net value of expected returns to themselves. All of these assumptions are controversial and are being challenged on many fronts. Many institutional analysts tend to use a broader conception of individuals. Many stress that perceived costs and benefits include the time and resources devoted to establishing and maintaining relationships (Williamson 1979), as well as the value that individuals attach to establishing a reputation for being reliable and trustworthy (Breton and Wintrobe 1982).

Alternatively, one could assume that the individuals who calculate benefits and costs are fallible learners who vary in terms of the number of other persons whose perceived benefits and costs are important to them and in terms of their personal commitment to keeping promises and honoring forms of reciprocity extended to them (E. Ostrom 1998, 2005). Fallible learners can, and often do, make mistakes. Settings differ, however, in whether the institutional incentives involved encourage people to learn from these mistakes. Fallibility and the capacity to learn can thus be viewed as assumptions of a more general theory of the individual. One can then presume that the various institutional arrangements that individuals use in governing and managing common-pool resources (or other problematic situations) offer them different incentives and opportunities to learn. In some settings, the incentives lead them to repeat the mistakes of the past. In others, the rate of effective learning about how to make a resource sustainable over time is rapid. In all cases, the repertoire of institutional design principles known to individuals also affects their capacity to change their institutions to improve learning and other outcomes when faced with repeated failures.

When fallible, learning individuals interact in frequently repeated and simple situations, it is possible to model them as if they had complete information about the variables relevant to making choices in those situations. In highly competitive environments, we can make the further assumption that the individuals who survive the selective pressure of the environment act as if they are maximizers of a key variable associated with survival in that environment (e.g., profits or fitness) (Alchian 1950; Dosi and Egidii 1987). When individuals face a relatively simple decision situation where institutions generate accurate information about the variables relevant to a particular problem, that problem can be adequately represented as a straightforward, constrained maximization problem.

The most fully developed, explicit theories of individual choice compatible with the IAD framework—game theory and neoclassical economic theory—in-volve extreme assumptions such as unlimited computational capability and full maximization of net benefits. For some field settings, these theories generate empirically confirmed explanatory and diagnostic results. When analyzing commodity auction markets run repeatedly in a setting where property rights are well defined and enforced at a relatively low cost to buyers and sellers, theories of market behavior and outcome based on complete information and maximization of profits predict outcomes very well. Using these assumptions about individual choice turns out to be a very useful way of doing institutional analysis when the problematic settings closely approximate this type of very constrained and competitive choice.

Many of the situations of interest in understanding common-pool resources, however, are uncertain and complex and lack the selective pressure and information-generating capabilities of a competitive market. Therefore, one can substitute the assumption of bounded rationality—that persons are intended rational but only limitedly so—for the assumptions of perfect information and utility maximization used in axiomatic choice theory (see Simon 1965, 1972; Williamson 1985; E. Ostrom, Gardner, and Walker 1994, chap. 9; B. Jones 2001). Information search is costly, and the information-processing capabilities of human beings are limited. Individuals, therefore, often must make choices based on incomplete knowledge of all possible alternatives and their likely outcomes. With incomplete information and imperfect information-processing capabilities, all individuals may make mistakes in choosing strategies designed to realize a set of goals (V. Ostrom 2007a). Over time, however, they can acquire a greater understanding of their situation and adopt strategies that result in higher returns. Reciprocity
may develop, rather than strictly narrow, short-term pursuit of self-interest (Hyden 1990; Oaterson 1993). Individuals do not always have access to the same information known by others with whom they interact. For example, how much any one individual contributes to a joint undertaking is often difficult for others to judge. When joint outcomes depend on multiple actors contributing inputs that are costly and difficult to measure, incentives exist for individuals to behave opportunistically (Williamson 1975). Opportunism—deceitful behavior intended to improve one’s own welfare at the expense of others—may take many forms, from consequential, perhaps unconscious shirking to a carefully calculated effort to defraud others with whom one is engaged in ongoing relationships. The opportunism of individuals who may say one thing and do something else further compounds the problem of uncertainty in a given situation. Moreover, the level of opportunistic behavior that may occur in any setting is affected by the norms and institutions used to govern relationships in that setting, as well as by attributes of the decision environment itself.

Predicting Outcomes Within an Action Arena

Depending upon the analytical structure of a situation and the particular assumptions about the actor used, the analyst makes strong or weak inferences about results. In tightly constrained, one-shot action situations under conditions of complete information, where participants are motivated to select particular strategies or chains of actions that jointly lead to stable equilibria, an analyst can frequently make strong inferences and specific predictions about likely patterns of behavior and outcomes.

When there is no limit on the number of appropriators from a common-pool resource or on the amount of harvesting activities they undertake, for example, one can develop a mathematical model of an open-access, common-pool resource (see, for example, E. Ostrom, Gardner, and Walker 1994). When the net benefits of harvesting to each entrant increase for the initial set of resource units sought and decrease thereafter, each appropriator acting independently tends to make individual decisions that jointly yield a deficient (but stable) equilibrium. A model of an open-access, common-pool resource generates a clear prediction of a race to use up the resource, leading to high social costs. Both field research and laboratory experimental research strongly support the predictions of overuse and potential destruction of open-access, common-pool resources when appropriators do not share access to collective-choice arenas in which to change the open-access structure they face (E. Ostrom, Gardner, and Walker 1994).

Many arenas, however, do not generate such unambiguous results. Instead of making completely independent or autonomous decisions, individuals may be embedded in communities where initial norms of fairness and conservation may change the structure of the situation dramatically. Within these situations, participants may adopt a broader range of strategies. Further, they may change their strategies over time as they learn about the results of past actions. The institutional analyst examining these more open, less-constrained situations makes weaker inferences and predicts patterns of outcomes that are more-or-less likely to result from a particular type of situation. In laboratory experiments, for example, giving subjects in a common-pool resource situation opportunities to communicate generally increases the joint outcomes they achieve (see E. Ostrom, Gardner, and Walker 1994), and citations contained therein). In field settings, one cannot just assume that helping individuals engage in face-to-face discussions in a few meetings will increase the probability of improved outcomes. There are many factors that affect the likelihood of successful long-term governance of resources. In Dietz, Ostrom, and Stern (2003), for example, we present strong evidence for government-owned forests that fail as well as succeed. Similarly, we find private and common-property forests that are severely overharvested as well as ones that are sustainably managed. Instead of the formal ownership that has been the focus of so much policy analyses, we find that agreement about the legitimacy of boundaries and reliable monitoring are far more likely to lead to higher levels of cooperation by users and to better-governed resources.

In field settings, it is hard to tell where one action arena starts and another stops. Life continues in what appears to be a seamless web as individuals move from home to market to work (action situations typically characterized by reciprocity, by exchange, or by team problem solving or command). Further, within arenas, choices of actions within a set of rules as contrasted to choices among future rules are frequently made without a recognition that the level of action has shifted. So, when a "boss" says to an "employee," "How about changing the way we do X?" and the two discuss options and jointly agree upon a better way, they have shifted from taking actions within previously established rules to making decisions about the rules structuring future actions. In other words, in IAD language, they have shifted to a collective-choice arena.

Evaluating Outcomes

In addition to predicting outcomes, the institutional analyst may evaluate the outcomes that are being achieved as well as the likely set of outcomes that could be achieved under alternative institutional arrangements. Evaluative criteria are applied to both the outcomes and the processes of achieving outcomes. Although there are many potential evaluative criteria, let us briefly focus on (1) economic efficiency, (2) equity through fiscal equivalence, (3) redistributional equity, (4) accountability, (5) conformance to moral norms, and (6) adaptability.

Economic Efficiency. Economic efficiency is determined by the magnitude of the change in the flow of net benefits associated with an allocation or reallocation
of resources. The concept of efficiency plays a central role in studies estimating the benefits and costs or rates of return to investments, which are often used to determine the economic feasibility or desirability of public policies. When considering alternative institutional arrangements, therefore, it is crucial to consider how revisions in the rules affecting participants will alter behavior and hence the allocation of resources.

**Fiscal Equivalence.** There are two principal means of assessing equity: (1) on the basis of the equality between individuals’ contributions to an effort and the benefits they derive and (2) on the basis of differential abilities to pay. The concept of equity that underlies an exchange economy holds that those who benefit from a service should bear the burden of financing that service. Perceptions of fiscal equivalence or a lack thereof can affect the willingness of individuals to contribute toward the development and maintenance of resource systems.

**Redistributional Equity.** Policies that redistribute resources to poorer individuals are of considerable importance. Thus, although efficiency would dictate that scarce resources be used where they produce the greatest net benefit, equity goals may temper this objective; the result is the provision of facilities that benefit particularly needy groups. Likewise, redistributional objectives may conflict with the goal of achieving fiscal equivalence.

**Accountability.** In a democratic polity, officials should be accountable to citizens concerning the development and use of public facilities and natural resources. Concern for accountability need not conflict greatly with efficiency and equity goals. Indeed, achieving efficiency requires that information about the preferences of citizens be available to decision makers, as does achieving accountability. Institutional arrangements that effectively aggregate this information assist in realizing efficiency at the same time that they serve to increase accountability and to promote the achievement of redistributional objectives.

**Conformance to General Morality.** In addition to accountability, one may wish to evaluate the level of general morality fostered by a particular set of institutional arrangements. Are those who are able to cheat and go undetected able to obtain very high payoffs? Are those who keep promises more likely to be rewarded and advanced in their careers? How do those who repeatedly interact within a set of institutional arrangements learn to relate to one another over the long term?

**Adaptability.** Finally, unless institutional arrangements are able to respond to ever-changing environments, the sustainability of resources and investments is likely to suffer. Rural areas of developing countries are often faced with natural disasters and highly localized special circumstances. If an institutional arrangement is too inflexible to cope with these unique conditions, it is unlikely to prosper. For example, if an irrigation system is centrally controlled and allocates only a specific amount of resources to annual and periodic maintenance, it may not be able to meet the special needs associated with a major flood that destroys a section of the canal system.

Trade-offs are often necessary in using performance criteria as a basis for selecting from alternative institutional arrangements. It is particularly difficult to choose between the goals of efficiency and redistributional equity. The trade-off issue arises most explicitly in considerations of alternative methods of funding public projects. Economically efficient pricing of the use of an existing resource or facility should reflect only the incremental maintenance costs and any external or social costs associated with its use. This is the well-known, efficiency-pricing principle that requires that prices equal the marginal costs of usage. The principle is especially problematic in the case of goods with nonsubtractable attributes. In such instances, the marginal cost of another user’s utilizing the good is zero; hence, the efficient price is also zero. Zero user prices, however, require that all sources of resource mobilization be tax-based and thereby induce other kinds of perverse incentives and potential inefficiencies. Evaluating how institutional arrangements compare across overall criteria is quite a challenge. Analytical examination of the likely trade-offs between intermediate costs is valuable in attempts to understand comparative institutional performance (see E. Ostrom, Schroeder, and Wynne 1993, chap. 5).

**EXPLANATION: VIEWING ACTION ARENAS AS DEPENDENT VARIABLES**

Underlying the way analysts conceptualize action arenas are implicit assumptions about the rules individuals use to order their relationships, about attributes of states of the world and their transformations, and about the attributes of the community within which the arena occurs. Some analysts are not interested in the role of these underlying variables and focus only on a particular arena whose structure is given. On the other hand, institutional analysts may be more interested in one factor affecting the structure of arenas than they are interested in others. Sociologists tend to be more interested in how shared value systems affect the ways humans organize their relationships with one another. Environmentalists tend to focus on various ways that physical and biological systems interact and create opportunities or constraints on the situations human beings face. Political scientists tend to focus more on how specific combinations of rules affect incentives. Rules, states of the world, and the nature of the community all jointly affect the types of actions that individuals can take, the benefits and costs of these actions and resulting outcomes, and the likely outcomes achieved.
The Concept of Rules

Rules are shared understandings among those involved that refer to enforced prescriptions about what actions (or states of the world) are required, prohibited, or permitted. All rules are the result of implicit or explicit efforts to achieve order and predictability among humans by creating classes of persons (positions) that are then required, permitted, or forbidden to take classes of actions in relation to required, permitted, or forbidden states of the world (Crawford and Ostrom 2005; V. Ostrom 1991).

With governance, one needs to ask where the rules that individuals use in action situations originate. In an open and democratic governance system, there are many sources of the rules individuals use in everyday life. It is not considered illegal or improper for individuals to organize themselves and craft their own rules, if the activities they engage in are legal. In addition to the legislation and regulations of a formal central government, there are apt to be laws passed by regional, local, and special governments. Within private firms and voluntary associations, individuals are authorized to adopt many different rules about who is a member of the firm or association, how profits (benefits) are to be shared, and how decisions will be made. Each family constitutes its own rule-making body.

When individuals genuinely participate in the crafting of multiple layers of rules, some of that crafting will occur using pen and paper. Much of it, however, will occur as problem-solving individuals interact to figure out how to do a better job in the future than they have done in the past. Colleagues in a work team are crafting their own rules when they might say to one another, "How about if you do A in the future, and I will do B, and before we ever make a decision about C again, we both discuss it and make a joint decision?" In a democratic society, problem-solving individuals do this all the time. They also participate in less fluid decision-making arrangements, including elections to select legislators.

Thus, when we do a deeper institutional analysis, we attempt first to understand the working rules that individuals use in making decisions. Working rules are the set of rules to which participants would make reference if asked to explain and justify their actions to fellow participants. Although following a rule may become a "social habit," it is possible to make participants consciously aware of the rules they use to order their relationships. Individuals can consciously decide to adopt a different rule and change their behavior to conform to such a decision. Over time, behavior in conformance with a new rule may itself become habitual (see Shimanoff 1980; Toulin 1974; Harré 1974). The capacity of humans to use complex cognitive systems to order their own behavior at a relatively subconscious level makes it difficult for empirical researchers to ascertain what the working rules for an ongoing action arena may be.

Once we understand the working rules, then, we attempt to understand where those rules come from. In a system governed by a "rule of law," the general legal framework in use will have its source in actions taken in constitutional, legislative,
If this view of the task is adopted, seven types of working rules can be said to affect the structure of an action situation. These are entry and exit rules, position rules, scope rules, authority (or choice) rules, aggregation rules, information rules, and payoff rules. The cumulative effect of these seven types of rules affects the seven elements of an action situation.

Entry and exit rules affect the number of participants, their attributes and resources, whether they can enter freely, and the conditions they face for leaving. Position rules establish positions in the situation. Authority rules assign sets of actions that participants in positions at particular nodes must, may, or may not take. Scope rules delimit the potential outcomes that can be affected and, working backward, the actions linked to specific outcomes. Authority rules, combined with the scientific laws about the relevant states of the world being acted upon, determine the shape of the decision tree, that is, the action-outcome linkages. Aggregation rules affect the level of control that a participant in a position exercises in the selection of an action at a node. Information rules affect the knowledge-contingent information sets of participants. Payoff rules affect the benefits and costs that will be assigned to particular combinations of actions and outcomes, and they establish the incentives and deterrents for action. The set of working rules is a configuration in the sense that the effect of a change in one rule may depend upon the other rules-in-use.

Let us return to the example of conducting an analysis of common-pool resources discussed earlier. Now we will focus on a series of questions that are intended to assist the analyst to get at the rules-in-use that help structure an action situation. Thus, to understand these rules, one would begin to ask questions such as:

- Entry and exit rules: Are the appropriators from this resource limited to local residents; to one group defined by ethnicity, race, caste, gender, or family structure; to those who win a lottery; to those who have obtained a permit; to those who own required assets (such as a fishing berth or land); or, in some other way, to a class of individuals that is bounded? Is a new participant allowed to join a group by some kind of entry fee or initiation? Must an appropriator give up rights to harvest upon migrating to another location?
- Position rules: How does someone move from being just a "member" of a group of appropriators to someone who has a specialized task, such as a water distributor-guard?
- Scope rules: What understandings do these appropriators and others have about the authorized or forbidden geographic or functional domains? Do any maps exist showing who can appropriate from which region? Are there understandings about resource units that are "off-limits" (e.g., the historical rules in some sections of Africa that particular acacia trees could not be cut down even on land owned privately or communally)?

- Authority rules: What understandings do appropriators have about mandatory, authorized, or forbidden harvesting technologies? For fishers, must net size be of a particular grossness? Must forest users use some cutting tools and not others? What choices do various types of monitors have related to the actions they can take?
- Aggregation rules: What understandings exist concerning the rules affecting the choice of harvesting activities? Do certain actions require prior permission from, or agreement of, others?
- Information rules: What information must be held secret, and what information must be made public?
- Payoff rules: How large are the sanctions that are to be imposed for breaking any of the rules identified above? How is conformance to rules monitored? Who is responsible for sanctioning nonconformers? How reliably are sanctions imposed? Are any positive rewards offered to appropriators for any actions they can take (e.g., is someone who is an elected official relieved of labor duties)?

The problem for the field researcher is that many rules-in-use are not written down. Nor can the field researcher simply take surveys, asking a random sample of respondents about their rules. Many of the rules-in-use are not even conceptualized by participants as rules. In settings where the rules-in-use have evolved over long periods of time and are understood implicitly by participants, obtaining information about rules-in-use requires spending time at a site and learning how to ask nonthreatening, context-specific questions about rule configurations.

Attributes of States of the World: Physical and Material Conditions

Although a rule configuration affects all of the elements of an action situation, some of the variables of an action situation are also affected by attributes of the physical and material world. What actions are physically possible, what outcomes can be produced, how actions are linked to outcomes, and what is contained in the actors' information sets are affected by the world being acted upon in a situation. The same set of rules may yield entirely different types of action situations depending upon the types of events in the world being acted upon by participants.

The attributes of states of the world and their transformation are explicitly examined when the analyst self-consciously asks a series of questions about how the world being acted upon in a situation affects the outcome, action sets, action-outcome linkages, and information sets in that situation. The relative importance of the rule configuration and states of the world in structuring an action situation varies dramatically across different types of settings. The rule configuration almost totally constitutes some games, like chess, where physical attributes are relatively unimportant. The relative importance of working rules to attributes of the world also varies dramatically within action situations.
Exclusionary and the Free Rider Problem

When it is difficult or costly to exclude

so that some individual's presence

Joint use of infrastructure effects can generate a

Subsidy to provide or exclude.

In sum, to provide public products can be easy to exclude, for failing to

situation can arise if there are free riders:

the public sector. Thus, disputes over the allocation of the public sector

so that every user pays for the product. In another context, it may

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INTEGRATING ACTION ARENAS

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**Multiple Levels of Analysis**

Besides multiple and nested action areas, one can also look at manifolds, nesting of

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**Bill Oram**
The ID framework is a broad diversity of policy.

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The short story of how the human brain processes information is vast and complex. The brain's ability to make sense of the vast amount of information it receives every second is a marvel of evolution. This process is often referred to as 'intentional processing,' and it involves a series of intricate steps that allow us to make informed decisions and carry out complex tasks.

The first step in this process is the initial detection and encoding of sensory information. Our eyes, ears, and other senses constantly scan the environment, collecting and processing data from the world around us. This raw data is then filtered through a system of cognitive filters, which help to prioritize and select information that is relevant to our current goals and needs.

Once this information is selected, it is then passed to the brain's executive system, which is responsible for planning, decision-making, and problem-solving. This system integrates information from various sources, such as memory, attention, and motivation, to create a coherent and meaningful representation of the world.

The final step in the process is the execution of the plan. This involves the activation of the appropriate muscles and motor systems to carry out the intended action. This can be a simple reflex, such as a knee-jerk response, or a complex motor task, such as playing a piece of music.

Understanding the brain's information processing system is crucial for developing effective strategies to enhance cognitive performance. By recognizing the limitations and strengths of this system, we can design interventions that support and enhance our ability to process information efficiently.

In conclusion, the brain's information processing system is a complex and dynamic system that enables us to make sense of the world and carry out complex tasks. By understanding how this system works, we can develop strategies to enhance our cognitive performance and achieve our goals.
The value of the AVF framework is that it is a powerful tool for understanding the complex interactions between various factors that contribute to student achievement. By providing a comprehensive and flexible approach, the AVF framework allows educators to tailor their strategies to the specific needs of their students.

Incorporating the AVF framework into teaching practices can lead to significant improvements in student outcomes. Teachers who use the framework are able to identify specific areas where students are struggling and design targeted interventions to address those weaknesses. This results in a more personalized and effective learning environment.

Moreover, the AVF framework encourages a collaborative approach to teaching, where teachers work together to share strategies and best practices. This not only enhances the quality of instruction but also supports a culture of continuous improvement and professional development.

Overall, the AVF framework is a valuable resource for educators looking to enhance their teaching effectiveness and improve student success. By leveraging this framework, teachers can better understand the needs of their students and develop strategies to support their individual growth and achievement.
NOTES

Policy studies and related research have suggested that the current framework must be modified to better meet the needs of the public. The framework has been criticized for its lack of transparency and accountability, and for not adequately addressing the needs of various stakeholders. The current framework is therefore being reviewed and revised to better meet the needs of the public.

The second conference was held in January 2003, on "Institutional Performance and Reform."


The Multiplier Streams Framework

Structure, Limitations, Prospects

Nikolas Zarzarahis

Studien Report

The Economic Conditions in Africa and in France: Industry for Commodity


Eden O'Connor

Facts and Figures

Policy and Action

The Multiplier Streams Framework

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