

INSTITUTIONAL ANALYSIS AND DEVELOPMENT: ELEMENTS OF THE FRAMEWORK IN HISTORICAL PERSPECTIVE

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Summary

The IAD framework is a general language for analyzing and testing hypotheses about behavior in diverse situations at multiple levels of analysis and concerns analyses of how rules, physical and material conditions, and attributes of community affect the structure of action arenas, the incentives that individuals face, and the resulting outcomes. A systematic exposition of this meta-language is provided.

1. Introduction

In previous centuries, social theorists such as Locke, Montesquieu, Hume, Adam Smith,

Hamilton, Madison, and Tocqueville developed what in effect were institutional analyses of their societies. “Old” or “classical” institutionalism was articulated from the turn of the nineteenth century on in the writings of John Dewey, Thorstein Veblen, John Commons. More recently, this work has been further extended by a wide range of writers including Donald Davidson, Richard Rorty, Amartya Sen, Donald McCloskey, Warren Samuels, Philip Selznick, Daniel Bromley, EJ Mishan, Yngve Ramstad, and others. Over the last few decades, there has been a particularly strong development of institutional analysis (sometimes differentiated by the term neo-institutional analysis) across a wide range of approaches. The “new institutional economics” tradition is based on the work of Douglass C. North, Oliver Williamson, and others. In sociology, current institutional analysis has been summarized in volumes by Mary Brinton and Victor Nee and by Paul Di Maggio and Walter Powell. The importance of culture and symbolism is given much greater emphasis in institutional analysis than will be found in more standard (and especially economic) analyses of organizations and behaviors. The elements involved in these frameworks are closely related to concepts that have been developed in the work on Institutional Analysis and Development (IAD) which has been developed over several decades alongside the applying of these analytical tools to a wide array of empirical examples. Proponents of the older institutionalism sought explanations for institutional change in terms of social and political volitions and often are opposed to the new institutionalism’s explanation of institutional change using rational choice theory or some variant of this. To illustrate the wider frameworks of institutional analysis, this chapter focuses on IAD.

2. Challenges

To begin, some of the difficulties that confront those interested in understanding incentives, institutions, and outcomes need to be indicated. Various aspects of the IAD approach are clarified if one is aware of the difficulties to be overcome in undertaking any form of institutional analysis. Here is an initial list of what is considered to be 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 configural rather than an additive manner.

These issues will be briefly discussed before turning to the IAD approach.

3. 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, the term institution is used in the latter sense, to refer to the shared concepts used by humans in repetitive situations organized by rules, norms, and strategies. By rules, is meant 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, is meant shared prescriptions that tend to be enforced by the participants themselves through internally and externally imposed costs and inducements. By strategies, is meant 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.

4. 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. A core problem 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 that are 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.

5. 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. 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.

6. 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. 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 focus on constitutional structures. These, in turn, affect the type of collective-choice decisions as they eventually impinge on the day-to-day decisions of citizens and/or subjects. Studies conducted at a micro level 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.

7. 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 recombining 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 a 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.

8. 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 meta-theoretical 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 with 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 herein. In this chapter, the framework is illustrated primarily with reference to 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. This is one of the models that has been 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 in order to address questions of reforms and transitions. Particular models then help the analyst to 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.

9. The Institutional Analysis and Development Framework

As indicated earlier, an institutional framework should identify the major types of structural variables that are present to some extent in all institutional arrangements, but whose values differ from one type of institutional arrangement to another. The IAD framework is a multi-tier conceptual map (see Figure 1). One part of the framework is the identification of an action arena, the resulting patterns of interactions and outcomes, and evaluating these outcomes (see right half of Figure 1). The problem could be at an operational tier where actors interact in light of the incentives they face to generate outcomes directly in the world. Examples of operational problems include:

- The task of designing the incentives of a voluntary environmental action group so as to overcome to some extent the free-rider problem;
- The challenge of organizing local users of a forest to contribute resources to the protection of local watersheds to improve soil quality and water storage; and
- The question of how to invest in irrigation infrastructures so that capital investments enhance, rather than detract from, the organizational capabilities of local farmers.

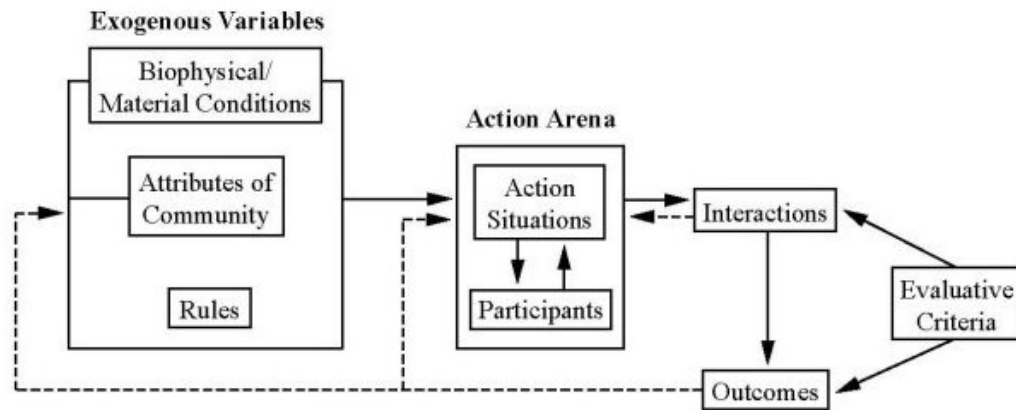


Figure 1. A Framework for Institutional Analysis.
 Source: Adapted from E. Ostrom, Gardner and Walker (1994, 37).

The problem could also be at a policy (or collective-choice) tier where decision-makers repeatedly have to make policy decisions within the constraints of a set of collective-choice rules. The policy decisions then affect the structure of arenas where individuals are making operational decisions and thus impacting directly on a physical world. The problem could just as well be at a constitutional tier where decisions are made about who is eligible to participate in policymaking and about the rules that will be used to undertake policymaking.

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 the variables specifying the situation and the motivational and cognitive structure of an actor as givens. 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.

The next section 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 1).

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Biographical Sketch

Elinor Ostrom is the Arthur F. Bentley Professor of Political Science and Professor of Public and Environmental Affairs at Indiana University. Her groundbreaking work on natural resource governance was presented in her 1990 book *Governing the Commons: The Evolution of Institutions for Collective Action*, in which she countered the conventional wisdom that the best arrangement for managing common-pool resources is either privatization or government control. Ostrom is also recognized for co-founding an institution in 1973 that has shaped the careers of hundreds of social scientists: Indiana University's Workshop in Political Theory and Policy Analysis. Under her direction and that of Vincent Ostrom, the Workshop has served as a supportive center for the coordination of long-term cross-disciplinary policy projects. Today, the Workshop attracts scholars in a wide variety of fields and has developed an international network of scholars and practitioners, including ties to the Center for Interdisciplinary Research in Bielefeld, Germany, and the Beijer Institute in Stockholm, Sweden. Ostrom is also Founding Director of the Center for the Study of Institutional Diversity at Arizona State University. In addition to *Governing the Commons*, she has authored or co-authored numerous books. She was awarded the Nobel Prize in Economic Sciences in 2009.