

Updated Guide to IAD and the Language of the Ostrom Workshop: A Simplified Overview of a Complex Framework for the Analysis of Institutions and their Development

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WORK IN PROGRESS– COMMENTS WELCOMED

Note: A condensed version of an earlier draft of this guide has been published as Michael D. McGinnis. 2011a. "[An Introduction to IAD and the Language of the Ostrom Workshop: A Simple Guide to a Complex Framework](#)," *Policy Studies Journal* 39 (1) (March 2011), 163-177.

This guide summarizes the conceptual categories and analytical frameworks that have been developed by Vincent and Elinor (Lin) Ostrom and other scholars affiliated with the Workshop in Political Theory and Policy Analysis they established at Indiana University in 1973. In 2012 this interdisciplinary research-teaching-training center was renamed in their honor as [The Vincent and Elinor Ostrom Workshop in Political Theory and Policy Analysis](#). Since the home base of the Ostrom Workshop is on the Bloomington campus of Indiana University, this intellectual community has been labeled the **Bloomington School** of Institutional Analysis (Mitchell 1988, Aligica and Boettke 2009). However, since so many of the members of this school work at other institutions in the U.S. and across the world, I use instead the term **Ostrom Workshop** as a shorthand reference for this entire network of scholarly collaboration.

The **Institutional Analysis and Development (IAD) Framework** encapsulates the collective efforts of this intellectual community to understand the ways in which institutions operate and change over time. The IAD framework assigns all relevant explanatory factors and variables to categories and locates these categories within a foundational structure of logical relationships. For the purposes of this guide, other closely related conceptual distinctions will be considered to be included in the IAD framework, even if they were not originally presented as such.

The IAD framework has evolved through a long and continuing process of engagement and contestation among scholars with different areas of expertise as well as predispositions

towards diverse modes of research. As such, it is itself a dynamic institution, and this overview serves as a snapshot of its current form.

The IAD framework was initially intended to serve as a tool to simplify the analytical task confronting anyone trying to understand institutions in their full complexity. Ironically, over time this framework itself has become quite complicated. Outsiders to this tradition are often put off by much of what may seem like intentionally obscure jargon, but each term and conceptual distinction has been introduced for a reason and each serves an important analytical purpose.

This guide is an effort to highlight the foundational principles upon which this complex framework for analysis has been built, and to help newcomers to this tradition to better appreciate how its myriad parts fit together into a coherent whole. I also hope that it can inspire future research, by contextualizing those aspects of the IAD framework that stand in most need of further elaboration.

The specific form of this framework has varied considerably over time; important stages in its own development can be seen at Kiser and Ostrom (1982), Ostrom (1990), Ostrom, Gardner, and Walker (1994), McGinnis (2000), Ostrom (1998, 2005, 2007b, 2010, 2011a) and Poteete, Janssen, and Ostrom (2010). The IAD framework is closely related to earlier work on public service industries and local public economies (Ostrom, Tiebout and Warren 1961, Ostrom and Ostrom 1977, Ostrom 1983, Ostrom, Schroeder, and Wynne 1993, McGinnis 1999b, Oakerson 1999) and well as more recent work on social-ecological systems (Ostrom 2007a, 2009, McGinnis and Ostrom, forthcoming). In this guide the term IAD framework is used to encompass all of these variants as well as other terms that may not have been initially introduced explicitly as part of that framework.

This guide will not try to trace all of these changes and connections in detail. Instead, it is intended to include the most important terms and analytical distinctions that continue to be used by scholars associated with the Ostrom Workshop. Readers are encouraged to examine the original sources cited in the references for further details and for alternative interpretations or explanations.

One additional caveat is required. This guide represents my own personal understanding of how all of these terms fit together as a collective whole. But the IAD and SES frameworks remain in active use, and as such are subject to innovations and reconsiderations. I make no presumption that all researchers associated with the Ostrom Workshop will agree with my presentation or summary of these concepts in all details, and I encourage them to contact me with any suggestions for revision. Their comments will be addressed in subsequent drafts, but, ultimately, I alone bear responsibility for any mistakes in this presentation and interpretation.

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I. FOUNDATIONS

1. Institutional Analysis, Development, Design, and Diagnosis

- 1.1. **“Institutions** are the prescriptions that humans use to organize all forms of repetitive and structured interactions” (E. Ostrom 2005: 3);
 - 1.1.1. Institutions shape processes of choice and consequences.
 - 1.1.2. Institutions act as both constraints and opportunities that shape the **processes** through which individual and collective choices take place and which shape the consequences of these choices for themselves and for others.
 - 1.1.3. No institution can be fully understood in isolation from the institutional configuration(s) within which it is embedded.
- 1.2. **Analysis** involves decomposition of institutional contexts into their component parts as a prelude to understanding how these parts affect each other and how these institutions shape choices and outcomes of processes.
 - 1.2.1. The IAD framework is designed to facilitate this process of analysis by directing the researcher’s attention to the full range of factors that will need to be considered to fully understand the relevant institutional context.
- 1.3. **Development** is interpreted broadly as referring to the ways in which an institutional configuration changes over time, driven both by processes endogenous to each institution as well as the consequences of interactions among related institutions.
 - 1.3.1. Institutional configurations have an internal logic that directs their development, but all institutions are also exposed to external influences that also shape their development.
 - 1.3.2. **Design** has sometimes been used as an alternative D in IAD, but doing so tends to convey an inappropriate presumption that institutional analysts are in a position to be able to provide unbiased advice concerning how communities might improve their own institutional arrangements; design is better seen as part of the development processes through which institutions are established, maintained, and transformed.
 - 1.3.3. **Diagnosis** has become a focus of recent applications of IAD and especially the related SES framework. Particular attention is placed on the identification of missing institutions as a source of dysfunctional performance of existing arrangements and consideration of possible ways of filling those gaps. Caveats concerning the limitations inherent in any design process (see above) still apply.

2. Epistemological and Ontological Foundations

- 2.1. **Political Theory** encompasses all efforts to understand the institutional foundation for governance, specifically involving efforts to related philosophical principles and normative values to the practical challenges of implementing these principles and values in real-world political institutions. (see Section 20 below)
- 2.2. **Framework – Theory – Model:** Distinctions among these three analytical tools are especially important for analysts to remember.

- 2.2.1. **Framework** identifies, categorizes, and organizes those factors deemed most relevant to understanding some phenomenon.
- 2.2.2. **Theory** posits general causal relationships among some subsets of these variables or categories of factors, designating some types of factors as especially important and others as less critical for explanatory purposes.
- 2.2.3. **Model** specifies the specific functional relationships among particular variables or indicators that are hypothesized to operate in some well-defined set of conditions.
- 2.3. **Institutional Analysis is Grounded in Methodological Individualism:** The foundational presumption is that social, political, and economic institutions can best be understood by realizing that they have been constructed by individual humans acting alone or in conjunction with each other.
- 2.4. **Behavioral Rational Choice:** a “second generation of rational choice theory” that incorporates effects of visual and verbal cues, norms of reciprocity and fairness, and willingness to sanction rule violators.
 - 2.4.1. **Bounded Rationality:** Individuals pursue goals but do so under constraints of limited cognitive and information-processing capability, incomplete information, and the often subtle influences of cultural predispositions and beliefs.
 - 2.4.2. **Adaptive Learning:** Fallible individuals are capable of learning from their mistakes but these processes of learning do not operate perfectly; even so, humans can effectively realize **adaptive learning** as they adjust their behavior to better fit the circumstances around them.
 - 2.4.3. **Institutions as Constraint and as Resource:** Institutions constitute and generate regularized patterns of interaction by changing the costs and benefits associated with alternative actions and by making available options that would not be feasible to any one individual acting alone.
 - 2.4.4. **Artisanship:** Since institutions are constructed, maintained, and transformed by humans, institutional analysis is necessarily a creative process through which the image or artistic vision of an artisan can be imperfectly realized in the real world (V. Ostrom 1980).
 - 2.4.5. **Public Entrepreneurship:** Since institutional processes necessarily require the concerted action of many individuals, an especially critical function is filled by those entrepreneurs who offer appealing new visions or innovative practical solutions to governance problems.
 - 2.4.6. **Institutional Diversity** is needed to provide the **requisite variety** (Ashby) in collective responses needed to fit the **diverse time-and-space contingencies** found in different settings, and to make effective use of local knowledge.
 - 2.4.7. **Contestation**, the active and respectful engagement of individuals in proposing and evaluating alternative responses to policy issues, which, since it enables participants to learn more about each other and to develop shared understandings about the problem at hand, is a foundational requirement for effective and sustainable governance.

- 2.4.8. **Opportunism with guile** (Williamson) signifies a warning that some individuals may seek to extract maximum advantage from any institutional setting and so those institutions should be designed to be able to cope with the manipulative efforts of especially selfish individuals, without undermining the dynamism that the legitimate self-interest imparts to processes of institutional change.
 - 2.4.9. **Monitoring, Sanctioning, and Dispute Resolution** take on particular importance in any form of governance, given this conjuncture of contestation over shared goals in the presence of opportunism.
 - 2.4.10. For additional aspects of the underlying philosophical perspective, see entry for Political Theory.
3. **Governance:** the processes through which collective decisions are made, implemented, interpreted, and reformed for some group – processes that are shaped not only by formal government officials but also by private individuals, corporations, and a diverse array of professional associations, community-based organizations, and voluntary/non-profit/non-governmental organizations. With specific reference to the context of the IAD framework, governance is the process through which the repertoire of rules, norms, and strategies relevant to a given realm of policy interactions are made, implemented, interpreted, and reformed.
- 3.1. A useful shorthand expression, with apologies to Lasswell, is that “governance determines who can do what to whom, and on whose authority.”
 - 3.2. **Governments** are comprised of complex systems of organizations each of which specializes in certain tasks of governance; given this complexity, any use of the term “the government” should be avoided.
 - 3.3. Governance does need not be restricted to the activities of formal organizations designed as part of a “government.”
 - 3.4. Governance does not need to be conceptualized as authorities having “**power over**” subjects or citizens, but can instead be realized in the form of citizens jointly exerting “**power with**” others, as they jointly endeavor to solve common problems or realize shared goals.
 - 3.5. **Self-Governance:** the capacity of any group of individuals to work together to resolve common problems and realize shared aspirations. Ideally, members of a self-governing community organize themselves so they can actively participate in all (or at least the most important) decision processes relating to their own governance.
 - 3.6. **Polycentric Governance** (see polycentricity).
 - 3.7. **Monocentric Governance:** Ideal type conceptualization of unitary sovereignty, as articulated in Hobbes’ *Leviathan*. No real-world governance system is fully monocentric, yet some governance systems concentrate a great deal of power in the hands of a small number of authorities at the national level.
 - 3.8. **Democratic administration** stands as a preferred alternative to an artificial separation of administrative functions from the people being governed; in *The*

- Intellectual Crisis in American Public Administration* Vincent Ostrom articulates a vision of democratic governance as **polycentricity** (see below) in practice.
- 3.9. Government organizations routinely assign administrative or managerial responsibilities for coordination to particular positions; similar tasks must be completed under informal modes of governance as well. **Management** may be seen as the operational implementation of specific tasks of governance.
 - 3.9.1. In the policy area of natural resources, the term **resource management** typically conveys the same breadth of meaning as the term **resource governance**. In other applications it remains useful to separate management from governance.

4. Polycentricity: a system of governance in which authorities from overlapping jurisdictions (or centers of authority) interact to determine the conditions under which these authorities, as well as the citizens subject to these jurisdictional units, are authorized to act as well as the constraints put upon their activities for public purposes.

- 4.1. “A **polycentric organization** has been defined as a **pattern of organization** where **many independent elements** are capable of **mutual adjustment** for **ordering their relationships** with one another **within a general system of rules.**” (V. Ostrom 1972, in McGinnis 1999, 73; emphasis added)
- 4.2. “a structural feature of social systems of many decision centers having limited and autonomous prerogatives and operating under an overarching set of rules.” (Aligica and Tarko, 2012: 237)
- 4.3. Typically, a polycentric political system includes all of the following types of formal organizations or informal groupings:
 - 4.3.1. **Multi-Level:** Local, provincial, national, regional, global units of governance
 - 4.3.2. **Multi-Purpose:** general purpose nested jurisdictions (as in traditional federalism) and special purpose, cross-jurisdictional political units (such as special districts)
 - 4.3.3. **Multi-Sectoral:** public, private, voluntary, community-based and hybrid kinds of organizations,
 - 4.3.4. **Multi-Functional:** incorporates specialized units for provision (selection of goals), production (or co-production), financing (taxes, donors), coordination, monitoring, sanctioning, and dispute resolution
- 4.4. Polycentricity requires more than just a multiplicity of organizational forms:
 - 4.4.1. “A necessary condition for federalism to exist is a system of concurrent regimes with overlapping jurisdictions. ... [A] “**highly federalized**” political system ... has a rich structure of overlapping jurisdictions with substantial autonomy among jurisdictions, substantial degrees of democratic control within jurisdictions, and subject to an enforceable system of constitutional law.” (V. Ostrom, 1993: 205, 229, as quoted in McGinnis and E. Ostrom, 2012, p. 22, emphasis added)
 - 4.4.2. “Polycentric” connotes many centers of decision making that are formally independent of each other. Whether they actually function independently, or

instead constitute an interdependent system of relations, is **an empirical question in particular cases**. To the extent that they take each other into account in competitive relationships, enter into various contractual and cooperative undertakings, or have recourse to central mechanisms to resolve conflicts, the various political jurisdictions in a metropolitan area may function in a coherent manner with consistent and predictable patterns of interacting behavior. To the extent that this is so, they may be said to function as a “system.” (Ostrom, Tiebout, and Warren, 1961: 831 emphasis added)

- 4.4.3. Necessary **preconditions for polycentric order for a political system** as a whole include “Polycentricity in the organization of (1) market arrangements; (2) the legal community; (3) constitutional rule; and (4) political conditions [selection of political leadership and formation of political conditions]” (V. Ostrom 1972, in McGinnis 1999b, p. 69, emphasis added; phrase in square brackets from p. 57).
 - 4.4.4. “The **efficiency of any particular polycentric system** would depend upon ... (1) the correspondence of different units of government to the scales of effects for diverse public goods; (2) the development of cooperative arrangements among government units to undertake joint activities of mutual benefit; and (3) the availability of other decision-making arrangements for processing and resolving conflicts among units of government.” (V. Ostrom 1972, in McGinnis 1999b, p. 53, emphasis added)
 - 4.4.5. By polycentric I mean a system where citizens are able to organize not just one but multiple governing authorities at differing scales. . . .Each unit exercises considerable independence to make and enforce rules within a circumscribed domain of authority for a specified geographical area. In a polycentric system, some units are general-purpose governments while others may be highly specialized. . . .In a polycentric system the users of each common-pool resource would have some authority to make at least some of the rules related to how that particular resource will be utilized. (E. Ostrom 2005: 283, as cited by Aligica and Tarko 2013: 735-6).
 - 4.4.6. A system is polycentric if “multiple public and private organizations at multiple scales jointly affect collective benefits and costs” (E. Ostrom 2012, 355)
- 4.5. Related Concepts:
- 4.5.1. **Federalism** as typically understood does not necessarily incorporate or recognize the critical role of cross-border special-purpose jurisdictions.
 - 4.5.2. The legal concept of **polyphonic federalism** (Schapiro 2009) generalizes standard conceptualizations of dual sovereignty (state and national levels) in the United States to instead realize that in many policy sectors, both levels of government can simultaneously exert authority over important matters of public policy.
 - 4.5.3. **Compound Republic** is the most appropriate label for the system of democratic governance found in the United States, which is composed of “the numerous associations that citizens constitute in local, state, regional, and nation-wide activities of governance” (V. Ostrom 2008, 4)

- 4.5.4. Polanyi's **polycentrism** is usually interpreted as happening in an automatic fashion, even though his original discussion (Polyani 1951) focused on the processes through which individual actors adapt to each other's behavior. If interpreted as purely automatic, this would not give sufficient attention to role of public entrepreneurs in making connections between units of a governance system, nor the critical role of explicit coordination among independent actors (McGinnis 2005)
- 4.5.5. Advocates of **New Public Management** tend to assign particular importance to the coordinating role of central authorities, whereas advocates of some versions of **network governance** tend to attribute too little importance to central coordination, by presuming that successful adaptations will emerge automatically from complex systems dynamics (McGinnis and E. Ostrom 2012)
- 4.5.6. Conceptualizations of European Union governance that are very closely related to Ostromian polycentricity include **multi-level governance** (Hooghe and Marks 2001, 2003), which also includes both general-purpose and special-purpose jurisdictions at varying scales, and **FOCJ for functional overlapping competing jurisdictions** (Frey and Eichenberg 1996, 2004).

II. CORE COMPONENTS OF THE IAD FRAMEWORK

- 5. **Overview of Key Components (see Figure 1).** The IAD Framework has its origins in a general systems approach to policy processes, in which inputs are processed by "policy-makers" into outputs that have outcomes that are evaluated, with feedback effects.
 - 5.1. **Inputs** into an action situation are organized into three categories of **contextual factors (attributes of the community, rules in use, nature of the good)** that encompass all aspects of the social, cultural, institutional, and physical environment that set the context within which an action situation is situated.
 - 5.1.1. The intended breadth of these contextual factors is well-described by V. Ostrom (1986, 48, emphasis removed): "The structure of any situation can then be specified as having reference to the community of shared understanding (elements of an epistemic order), rules and rule-ordered relationships (elements of political order), and the nature of goods being produced, exchanged, and/or consumed (elements of economic order). Material conditions of the environment, rule-ordered patterns of human association, and the shared cognitive dimensions of human cultures provide the most general context for how the epistemic, economic, and political orders are nested in relation to one another to create an identifiable configuration of relationships which forms the structure of prototypical situations.
 - 5.2. The **action situation** is the "black box" where operational, collective, or constitutional choices are made.
 - 5.2.1. Originally the action situation was enclosed within an **action arena** which also included the **set of actors** as a separate component. However, since the

interests and capabilities of actors can be attributed to the effect of the position rules defined below, E. Ostrom (2010) recommends abandoning this distinction between action situation and action arena. This recommendation has been incorporated within the SES framework (see below).

- 5.2.2. Actors bring to any action situation their existing repertoire of **decision processes** and capabilities (see section on Behavioral Rational Choice)
- 5.3. **Outcomes** are shaped by both the outputs of the action situation and by exogenous factors.
- 5.4. Participants **evaluate** actions, outputs, and outcomes, and these evaluations may affect any stage of the process.
- 5.5. **Feedback and adaptive learning** may affect inputs and processes within the action situation.
- 5.6. **Nested systems**
 - 5.6.1. Action situations also differ in the **scope** of their activities, ranging from practical details of implementation to more expansive concerns about how societies should be organized (see distinctions among operational, collective and constitutional **levels of analysis or arenas of choice** below).
 - 5.6.2. A **focal action situation** will be nested within larger action situations, and any corporate actors in the focal action situation will have been constructed in “higher-level” action situations.
 - 5.6.3. Each action situation is connected to **adjacent action situations**, including those whose outputs determine the social, cultural, and institutional conditions under which participants in the first action situation are empowered to act.
 - 5.6.4. Changes in the outcomes of any action situation may ramify throughout this complex system of inter-connected action situations.
 - 5.6.5. Within any one action situation, the cycle of input-policy-output-feedback may recur indefinitely.
 - 5.6.6. Some systems of interconnected action situations may be directly decomposable into relatively distinct sub-components, whereas many more are only “nearly decomposable,” which still gives institutional analysts the leverage needed to understand their operation.
 - 5.6.7. Systems vary in the extent to which they are stable, robust or resilient
 - a. In a stable equilibrium the outcome returns to that state after being disturbed by an exogenous shock.
 - b. Resilience refers to ability of a biophysical or ecological system to remain within the same general region of equilibrium dynamics after being exposed to an exogenous shock; in this concept from the ecological literature the original outcome need not be restored by the system’s core operating elements or characteristics remain in effect if that system is resilient.
 - c. Robustness refers to the ability of human-constructed systems to remain functioning even after experiencing an exogenous shock; this term is frequently used in the engineering literature.

- d. Any system may be fundamentally disrupted if it is exposed to a sufficiently large or sustained series of disturbances.

6. **Levels of Analysis / Arenas of Choice:** A nested arrangement of action situations, based on the scope of the activities conducted within them, with the expectation that those choice situations of broader scope (such as constitution-making) will elicit a more inclusive or cooperative mode of behavior than narrower issues of implementation (in which immediate practical implications for an actor's self-interest may loom larger); opportunism and other forms of strategic behavior will never be completely absent, but the relative combination of selfish and other-regarding motivations should vary under different circumstances.

- 6.1. **Operational Choice:** implementation of practical decisions by those individuals who have been authorized (or allowed) to take these actions as a consequence of collective choice processes.
- 6.2. **Collective Choice:** the processes through which institutions are constructed and policy decision made, by those actors authorized to participate in the collective decisions as a consequence of constitutional choice processes, according to the procedures as established by constitutional choice processes.
- 6.3. **Constitutional Choice:** the processes through which collective choice procedures are defined, including legitimizing and constituting all relevant collective entities involved in collective or operational choice processes.
 - 6.3.1. **Micro-constitutional choice:** term used to emphasize the general relevance of constitutional choice processes to the construction of all kinds of collective entities, from very small to nation-states and beyond
- 6.4. **Meta-Constitutional Level of Analysis** encompasses long-lasting and often subtle constraints on the forms of constitutional, collective, or operational choice processes that are considered legitimate within an existing culture; many of these factors may not be amenable to direct change by those individuals under the influence of these cultural predispositions, but these cultural factors do change over time, in part as a consequence of changing patterns of behavior.
- 6.5. **Level-shifting strategy:** if participants in one arena of choice feel their interests are not well-represented in that context, they may seek to move the question to consideration at an adjacent level (or arena); also known as forum-shopping.

7. **Action Situation** is the core component of the IAD Framework, in which individuals (acting on their own or as agents of organizations) observe information, select actions, engage in patterns of interaction, and realize outcomes from their interaction.

- 7.1. Each action situation represents a prototypical situation (see discussion of contextual factors above) that can be taken as a unit of analysis. In these situations "Ideas, patterns of association, material conditions and productive possibilities meld in relation to one another to form configurations of relationships where **individuals**

- in **positions** take **actions**, in light of **information**, the **control** they exercise, and the **payoffs** they face, to attempt to achieve **outcomes** and **results**. (V. Ostrom 1986, 52, citing unspecified work by E. Ostrom)
- 7.2. **Working Components** of an action situation specify the nature of the relevant actors as well as the resources and options they face, and thereby serve as a generalization of the “rules of a game” (Ostrom, Gardner, and Walker, p. 29).
- a. Participants in
 - b. Positions who must decide among diverse
 - c. Actions in light of the
 - d. Information they possess about how actions are
 - e. Linked through the level of control each actor has over
 - f. Potential outcomes and the
 - g. Costs and Benefits assigned to actions and outcomes.
- 7.3. In game models, the nature of each of these working components needs to be specified by the analyst before formal derivations can be made, but in an action situation any of these working components may remain subject to endogenous change.
- 7.4. **Rules** that specify the values of the working components of an action situation; each rule has emerged as the outcome of interactions in an adjacent action situation at a different level of analysis or arena of choice (Ostrom, Gardner, and Walker, pp. 41-42)
- a. **Position rules** specify a set of positions, each of which has a unique combination of resources, opportunities, preferences, and responsibilities.
 - b. **Boundary rules** specify how participants enter or leave these positions.
 - c. **Authority rules** specify which set of actions is assigned to which position.
 - d. **Aggregation rules** specify the transformation function from actions to intermediate or final outcomes.
 - e. **Scope rules** specify set of outcomes.
 - f. **Information rules** specify the information available to each position.
 - g. **Payoff rules** specify how benefits and costs are required, permitted, or forbidden to players.
- 7.5. **Default conditions** that hold in absence of specified alternatives (Ostrom, Gardner, and Walker, p. 78).
- a. There exists one position.
 - b. Each player occupies one and only one position.
 - c. Each player can take any physically possible action.
 - d. Players act independently; physical processes determine aggregation of actions into outcomes.
 - e. Each player can affect any state of affairs physically possible.
 - f. Each player can know what the consequences are of his/her or others’ actions.

- g. Any player can retain any outcome that the player can physically obtain and defend.

7.6. Typical Clusters of Action Situations Found in Different Contexts

- 7.6.1. **Local Public Economies:** Construction of Jurisdictional Units, Provision, Production, Financing, Coordination, Dispute Resolution
- 7.6.2. **CPRs and Social-Ecological Systems:** Appropriation, Investment and Maintenance, Monitoring, Sanctioning, Evaluation and Claim-Making, Rule-Making
- 7.6.3. **Policy Instruments (or Policy Tools)** are institutional configurations, with associated actor networks implementing each instrument; typical activities include Lobbying, Proscribing (law-making or regulation), Implementation, Monitoring, Enforcing, Coalition-Building and Maintenance.

8. **Nature of the Good or Physical/Material Conditions:** summary terms used to designate all aspects of relevant physical constraints on action situations.

8.1. Two Defining Characteristics of Goods or Services

8.1.1. **Subtractability:** Does A's consumption of a unit of that resource lower B's potential enjoyment?

8.1.2. **Exclusion:** How costly is it for A to exclude B from consumption?

8.2. **Four Types of Goods or Services** and the dilemmas most commonly experienced in their production or consumption:

8.2.1. **Private Goods:** Subtractability and low costs of exclusion.

- a. Private goods and services can be produced efficiently through processes of market exchange.
- b. To operate efficiently, markets must be located within the supporting framework of such public goods as rule of law, secure property rights, and a medium of exchange

8.2.2. **Public Goods:** Nonsubtractability and high costs of exclusion.

- a. Free rider problem leads to sub-optimal production of public goods and services.
- b. Three **sources of publicness** are analytically separable (even though they may often be combined in specific cases): "(1) public goods arising from efforts to control indirect consequences, **externalities** or spillover effects; (2) public goods provided because some goods and services **cannot be packaged** [susceptible of being differentiated as a commodity or service before it can be readily purchased and sold]; and (3) public goods consisting of the **maintenance of preferred states of community affairs.**" Ostrom, Tiebout, and Warren (1961, 832, emphasis added, phrase in square brackets taken from p. 833)

8.2.3. **Toll Goods:** Nonsubtractability and low costs of exclusion.

- a. Also known as Club Goods, especially when consumption can be restricted to members of a defined club.
- b. Congestion effects can significantly reduce realization of potential benefits to consumers.

8.2.4. **Common Pool Resources (CPRs):** Subtractability and high costs of exclusion;

- a. The term **commons** is informally used to refer to public goods, common pool resources, or any area with uncertain property rights. For analytical purposes it is necessary to be more specific.
- b. In a **CPR** resource units are extracted (appropriated) from a common pool and the resulting products may be used by the appropriator for

consumption, used as input in some production function, or exchanged with other actors.

- c. **Appropriation Externality:** One person's use of a resource can affect availability of resource to other users.
- d. **Rent dissipation** occurs when actors in a CPR extract higher levels of resources than would be taken under the net maximum level (or optimum for the group as a whole).
- e. **Assignment Problems** arise whenever appropriators face a variety of "appropriation spots" that are differentiated in productive yield.
- f. **Technological externality:** Consequences of unequal access to appropriation technologies of differing levels of effectiveness
- g. **Provision** of infrastructure that may improve availability of resource and/or productivity of appropriation (includes construction and maintenance activities).
- h. **Tragedy of the Commons:** In an open access CPR with no governance arrangements in operation, appropriators will tend to over-exploit the resource and may destroy it entirely.
- i. **Drama of the commons, or struggle of the commons** are more appropriate phrases that encompass the possibility that positive or negative outcomes may occur under different circumstances and practices.

8.2.5. In applications of the IAD framework, allowance must be made for the possibility that a particular good or service activity may have the properties of different types of goods under different institutional settings. In addition, different components of a good or service may simultaneously express properties of different types of goods. For example, a fish taken from a common-pool fishery may be consumed as a private good or used in the production of a club/toll or public good.

8.2.6. The extent to which the nature of a good can be transformed by technological innovations or cultural changes remains in disputed. Elinor and Vincent Ostrom treated the nature of a good as intrinsic or foundational, but it may be more reasonable to allow goods to be, at least to some extent, constructed by new technologies and social understandings.

9. Rules-in-Use: summary term used to designate all relevant aspects of the institutional context within which an action situation is located.

- 9.1. **Formal Rules** (or rules-on-paper) in contrast to the rules that tend to be used in actual settings.
- 9.2. **Repertoire** of Strategies, Norms, Rules being used on a regular basis by participants (See Grammar of Institutions)
- 9.3. **Property Rights** (See below)

10. Attributes of the Community: summary term used to designate all relevant aspects of the social and cultural context within which an action situation is located.

10.1. Trust: to what extent do members of this community feel confident that other members will not take maximum advantage of their vulnerabilities and/or will come to their assistance when needed; specifically, that others will live up to their agreements even if doing so may not be in their immediate interest

10.2. Reciprocity: do members of this community share the common expectation that others will tend to reciprocate their own acts of cooperation?

10.3. Common Understanding (or shared understanding): What values and conceptual frameworks do the members of this community share, and specifically do most of them share at least some core values or goals as a member of that community?

10.4. Social Capital can be used in two senses:

10.4.1. Resources that an individual can draw upon in terms of relying on others to provide support or assistance in times of need;

10.4.2. A group's aggregate supply of such potential assistance, as generated by stable networks of important interactions among members of that community.

10.5. Cultural Repertoire: set of strategies, norms, rules, organizational templates, and other remembered or imagined practices that are readily available to the members of that community for their use in processes of deliberation and implementation

11. Outcomes are generated by the conjuncture of the outputs of a given action situation, other closely related action situations, and exogenous influences that may not always be subject to effective control of human intervention.

12. Evaluative Criteria may be used by participants or external observers to determine which aspects of the observed outcomes are deemed satisfactory and which aspects are in need of improvement.

12.1. **Efficiency** in use of resources, especially capture of economies of scale.

12.2. **Equity** in distributional outcomes and processes.

12.3. **Legitimacy** as seen by participants in decision processes.

12.4. **Participation** tends to increase legitimacy; co-production can be especially effective form of participation.

12.5. **Accountability**, especially to direct users of resource.

12.6. **Fiscal equivalence:** the extent to which the beneficiaries of a public good or service are expected to contribute towards its production.

12.7. Consistency with the **moral values** prevalent in that community.

12.8. **Adaptability, Resilience, Robustness, or Sustainability:** Loosely speaking, "the capacity to sustain a shock, recover, and continue to function and, more generally, cope with change" (Anderies et al. 2010). Of these terms, robustness is the term most appropriate for use as a performance criterion for human-designed systems.

13. Feedback and Learning processes are triggered by actors' evaluation of actions and outcomes, based on the information they are able to observe and process; feedback may impact any component of the IAD framework, and different levels of learning loops may be used to distinguish more extensive processes or reconsideration.

III. RELATED FRAMEWORKS

14. Grammar of Institutions: effort to develop a common framework for understanding strategies, norms, and rules as different types of institutional statements, which are governed by an underlying grammatical structure (Crawford and Ostrom 1995)

14.1. **Components** in the Original Formulation of ADICO Framework

14.1.1. **A = Attributes** of the actors to whom this institutional statement applies.

14.1.2. **D = Deontic content** of the statement, specifying which actions may, must, or must not be undertaken by the relevant actor.

14.1.3. **I = Aim or Target** denotes the action or outcome to which the action in question is to be applied.

14.1.4. **C = Conditions** under which this particular statement is deemed appropriate or relevant for application.

14.1.5. **O = Or Else** specifies the actor or actors to whom is given the responsibility of imposing sanctions on those who fail to implement the statement as intended.

14.2. **Delta parameter** is used to designate how norms can affect the choices of boundedly rational individuals; this parameter is included in the utility function of an individual who has internalized this normative value, in the sense that following the normative injunction adds a positive increment of utility to that choice option (above and beyond its expected utility in purely material terms) whereas options that violate a norm instead reduce the utility experienced by that individual.

14.3. Institutional Statements

14.3.1. Strategies: AIC only

14.3.2. Norms: AIC plus D

14.3.3. Rules: Full ADICO

14.4. Clarifications

14.4.1. Each rule implicitly makes a connection to some other strategy, norm, or rule which guides the choices of the actor in the position designated as the enforcer in the Or Else component. The actor in the position so designated may be subject to further sanctions for dereliction of duty, or may be guided by normative expectations or material interests only.

14.4.2. John R. Commons emphasized that each right conveys a correlative duty on some authority to protect that right, here represented through the link established by the Or Else component of a rule.

- 14.4.3. Each norm implicitly requires the effective operation of some process of socialization through which delta parameters are associated with different actions; this socialization process in turn requires the active intervention of parents, teachers, religious leaders, and other socializing actors deemed responsible for this process.
- 14.4.4. Norms enforced by social sanctions or informal arrangements do not warrant an Or Else condition, since no position is defined as having that responsibility. However, social sanctions will be effectively enforced only if a norm is widely shared by members of that community, which requires that norm socializers have done their job well.

14.5. Later Revisions

- 14.5.1. **Object:** B added to clarify object of an institutional statement, based on analogy of the object of a verb in linguistic grammar
 - a. B included in strategies, norms, and rules
 - b. Explicit specification of this component makes it easier for researchers to reliably code institutional statements
- 14.5.2. **Position-holders** may be assigned the responsibility of giving the relevant set of actors a common signal or message upon which their action is coordinated; may take the form of sending a signal to coordinate strategic choices or deciding which norm or rule is most directly applicable under that given set of circumstances.
- 14.5.3. A formal **organization** can be conceptualized as a team of actors connected together in a network of relationships, each directing, monitoring or otherwise affecting the behavior of other members; as specified in a configuration of mutually defining positions, rules, norms, and strategies.
- 14.5.4. Formal organizations typically assign particular tasks or responsibilities to positions known as **agents**.
- 14.5.5. Members of an organization should share at least some goals and/or values in common, although they differ in their individual interpretation of these goals as well as having diverse individual interests. This shared vision can be seen as the **mission** of that organization.

15. Property Rights are an especially important form of institution for anyone studying the use of natural resources.

15.1. Goods, rights, and rights-holders are logically separable concepts.

- 15.1.1. **Nature of good:** public, private, toll goods, CPR; primarily determined by physical nature of that good or service, but a good's de facto type may be affected by the way in which consumers use (or conceptualize) it.
- 15.1.2. **Property rights system:** Systems of interrelated rights as defined by legal and institutional context: public, private, common property, open-access. Although

these terms are commonly used in various literatures, they can introduce confusion when they do not refer to specific bundles of rights (see below).

- 15.1.3. **Rights-Holder:** Representational claims of entity claiming property rights: may be individual, private corporation, voluntary association, community-based organization, or public agency (government organizations of all types and at all levels).
 - 15.1.4. The type or nature of a good is separate from the property rights used to manage it and from the nature of relevant rights-holders.
 - 15.1.5. Common pool resources (CPRs) are not automatically common property, nor do CPRs have to be managed by community-based organizations
- 15.2. **Property rights** determine which actors have been authorized to carry out which actions with respect to a specified good or service
- 15.2.1. **Components** of rights out of which more complex bundles can be built:
 - a. **Access:** Right to enter a defined area and enjoy its benefits without removing any resources.
 - b. **Withdrawal:** Right to obtain specified products from a resource system and remove that product from the area for proscribed uses.
 - c. **Management:** Right to participate in decisions regulating resource or making improvements in infrastructure.
 - d. **Exclusion:** Right to participate in the determination of who has right of access or withdrawal or management.
 - e. **Alienation:** Right to sell, lease, bequeath, or otherwise transfer any of the preceding component rights.
 - 15.2.2. **Bundles of Rights** or positions (in context of CPRs)
 - a. **Authorized Entrant:** Access rights only
 - b. **Authorized User:** Access and withdrawal rights
 - c. **Claimant:** Access, withdrawal, and management rights
 - d. **Proprietor:** All rights except alienation
 - e. **Owner:** All components held in combination.
 - 15.2.3. Types of Property Rights Systems (in context of CPRs).
 - a. **Open Access:** No effective restrictions on use of resources.
 - b. **Private Property:** Bundles of rights held by and exchanged among individuals or legally recognized corporate entities; typically including full rights of alienation.
 - c. **Public Property:** Bundles of rights held by official agents of some unit of government.
 - d. **Common (or communal) Property:** Bundles of rights held, defined, and exchanged by some communal entity as a whole.

- 15.3. **Ownership** (in context of development aid): Having the recipients of development assistance take “ownership” of a project has become an often-articulated goal of development agencies seeking to insure the sustainability of their efforts; in IAD terminology a complete sense of ownership would require positive answers to the last part of each of the following questions:
- 15.3.1. Provision: are priorities for projects selected by donors only, jointly with local beneficiaries, or by local communities themselves?
 - 15.3.2. Production: are projects implemented by non-local contractors or via some process of co-production?
 - 15.3.3. Financing: do donors set the terms of the project (and perhaps require only “sweat equity” from recipients) or are recipients expected to impose taxes or user fees on themselves (or otherwise credibly commit themselves) to support the project?
 - 15.3.4. Consumption: do benefits accrue to donors (via contractor support or tourist enjoyment) or do local communities fully share in increased value?
 - 15.3.5. Alienability: does the project end when donors leave or are local communities expected to take responsibility for its future status?
 - 15.3.6. Local Public Economies

16. Local Public Economies

16.1. General Framework

- 16.1.1. **Local Public Economy** consists of a mixture of provision and production units and their dynamic interactions.
- 16.1.2. **Public Economy**: generalization of political economy or market economy; incorporates all relevant public, private, voluntary, and community-based organizations active in a given area of public policy
- 16.1.3. **Public Service Industry**: generalization of market sector to cover all organizations actively engaged in some identifiable area of public policy, specifically including the provision or production of public or toll goods or the management of common-pool resources.
- 16.1.4. **Public** used in sense of Dewey (1927): a group, of any size, that is affected by some substantive problem or issue

16.2. Core Activities and Units

- 16.2.1. **Collective Consumption Unit**: Public goods and services are necessarily consumed or enjoyed by some collective unit as a whole; the same can be said for tool or club goods.
- 16.2.2. **Provision**: Selection of the bundle of public goods/services for a collective consumption unit
 - 16.2.2.1. **Collective decisions** made by provision unit include (Oakerson, p. 7)
 - a. What public goods and services to provide (and what remains private)

- b. What private activities to regulate, and type and degree of regulation,
 - c. Amount of revenue to raise, and how to raise it (taxes, user fees, debt service, intergovernmental transfers, etc.)
 - d. Quantities and quality standards of goods and services to be provided,
 - e. How to arrange for production, and how to link provision to production.
- 16.2.2.2. **Dilemmas** faced by provision units
- a. Preference revelation, including all the problems of voting as demonstrated by social choice theory.
 - b. Setting boundaries between jurisdictions to enhance fiscal equivalence.
 - c. Accountability of public officials to citizens and to “higher” authorities.
 - d. Transaction costs experienced in extended efforts of deliberation or evaluation.
- 16.2.3. **Production:** Physical process of constructing a public good/service
- a. Production units may be private, public, voluntary, or community-based organizations.
 - b. Production units may be able to capture economies of scale that would not be possible if a single provision unit had to produce all desired goods and services.
 - c. Regular Production: Producer units are kept separate from consumers or providers
 - d. **Co-Production:** Consumers actively participate in the actual production of a good or service (examples: health, education, community security)
- 16.2.4. **Financing:** Source of financial and other resources that the providers need to give the producers of a public good/service; may involve cross-jurisdictional transfers (as are common in intergovernmental relations).
- 16.2.5. **Coordination:** The activities of different units need to be coordinated in some fashion, but no single center of authority is responsible for making final decisions.
- 16.2.6. **Monitoring:** Many units in a public economy monitor the activities of other units; some units (media, police, auditors, etc.) are specialists in this activity.
- 16.2.7. **Dispute Resolution:** As disputes will inevitably arise among different units in a public economy, some mechanisms or processes must be place to help the disputing parties come to some resolution. Specialized agencies (courts, arbiters, etc.) may be established for this purpose.
- 16.2.8. Networks of vertically differentiated functional units may link provision, production, and other units specializing in specific areas of public policy.

16.2.9. Other generic (and potentially universal) tasks or functions of governance that were not explicitly demarcated as part of the local public economies research include:

- a. Sanctioning: the application of punishments to those who violate rules or as the consequence of dispute resolution procedures.
- b. Information: generation and dissemination of information needed for evaluation, learning, monitoring and sanctioning.
- c. Rule-Making (formal laws and informal mechanisms of coordination)
- d. Construction of collective entities and definition of rights and responsibilities assigned to agents
- e. Motivational structures: Socialization of new actors and formation of incentives facing agents of collective actors.

16.3. Options for Obtaining Public Services

16.3.1. "A government that serves as a collective consumption unit may obtain the desired public goods by

- a. Operating its own production unit
- b. Contracting with a private firm
- c. Establishing standards of service and leaving it up to each consumer to select a private vendor and to purchase the service
- d. Issuing vouchers to families and permitting them to purchase service from any authorized supplier
- e. Contracting with another government unit
- f. Producing some services with its own unit, and purchasing other services from other jurisdictions and from private firms."
- g. (Source: Table 3, Ostrom and Ostrom 1977, reprinted McGinnis 1999b, p. 8 examples not included.)

16.3.2. Alternative Mechanisms for Linking Provision and Production (Oakerson)

- a. In-house production
- b. Coordinated production
- c. Joint production
- d. Intergovernmental contracting
- e. Private contracting
- f. Franchising
- g. Vouchers

16.3.3. Commonly Used Governance Mechanisms in Local Public Economies (Oakerson)

- a. Local government constitution
- b. Citizen choice/Citizen voice/Citizen exit
- c. Representation
- d. Overlying jurisdictions
- e. Public entrepreneurship
- f. Professional associations
- g. Multijurisdictional forums
- h. Functional ties and overlays

16.4. Principles of Good Governance for Local Public Economies (Oakerson, pp. 122-123)

- 16.4.1. Distinguish provision from production; local governments are primarily provision units.
- 16.4.2. Give citizens a broad range of options and let them choose how to constitute their local governments.
- 16.4.3. Let citizens create optional neighborhood units in large central cities or urban counties
- 16.4.4. Let local officials (not central planners) decide separately how to organize production
- 16.4.5. Allow citizens to increase local taxes.
- 16.4.6. Be sure that an umbrella jurisdiction overlies both central cities and surrounding suburbs.

17. Design Principles for sustainable management of common-pool resources (perhaps better described as good practices): characteristics of common-pool resource management systems that have been observed to be regularly associated with the long-term sustainability of that system. Not all principles need to be realized in all circumstances, but the prospects for sustainable governance tend to increase when more of these principles are in place.

17.1. Original Formulation of design principles (Ostrom 1990)

- 17.1.1. Boundaries (biophysical and social) are clearly defined.
- 17.1.2. Congruence between appropriation and provision rules (for fairness considerations) and fitness to local conditions (for practicality).
- 17.1.3. Collective choice processes enable most affected individuals to participate in making rules.
- 17.1.4. Monitors are accountable to appropriators (or are the appropriators themselves).
- 17.1.5. Graduated sanctions are applied to rule violators (in increasing levels of intensity).
- 17.1.6. Participants have easy access to low-cost local arenas to resolve conflicts.
- 17.1.7. Minimal recognition by “higher” authorities that appropriators have rights to self-organize and devise their own institutions.
- 17.1.8. Nested enterprises for appropriation, provision, monitoring, enforcement, conflict resolution, and governance.

17.2. Later revisions disaggregate some principles into separate components applied to the social and the ecological side of the social-ecological system within which a CPR resides. This version is taken from Cox et al. 2010.

17.2.1. Clearly defined boundaries:

[A] Individuals or households who have rights to withdraw resource units from the common-pool resource must be clearly defined;

- [B] The boundaries of the common-pool resource must be well defined.
- 17.2.2. Congruence between appropriation and provision rules and local conditions:
 - [A] Appropriation rules restricting time, place, technology, and/or quantity of resource units are related to local conditions.
 - [B] The benefits obtained by users from a common-pool resource, as determined by appropriation rules, are proportional to the amount of inputs required in the form of labor, material, or money, as determined by provision rules.
- 17.2.3. Collective-choice arrangements: Most individuals affected by the operational rules can participate in modifying the operational rules.
- 17.2.4. Monitoring:
 - [A] Monitors are present and actively audit common-pool resource conditions and appropriator behavior;
 - [B] Monitors are accountable to or are the appropriators.
- 17.2.5. Graduated sanctions: Appropriators who violate operational rules are likely to be assessed graduated sanctions (depending on the seriousness and context of the offense) by other appropriators, officials accountable to these appropriators, or both.
- 17.2.6. Conflict-resolution mechanisms: Appropriators and their officials have rapid access to low-cost local arenas to resolve conflicts among appropriators or between appropriators and officials.
- 17.2.7. Minimal recognition of rights to organize: The rights of appropriators to devise their own institutions are not challenged by external governmental authorities.
- 17.2.8. Nested enterprises: Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises.

18. **The SES (Social-Ecological Systems) Framework** is an ongoing effort to revise the IAD framework so as to give equal attention to the biophysical and ecological foundations of institutional systems.

- 18.1. **Focal Action Situation** denotes the pattern of interactions among resource users and the particular resources upon which their livelihood relies; both the social and the ecological components of this focal action situation can be decomposed into smaller components as well as situated within the context of broader aggregations.
- 18.2. **Multi-Tier Structure of Explanatory Factors.** The large number of factors or variables that researchers have identified as being potentially relevant to the dynamic patterns of interaction between human groups and their environment are arranged in a nested series of tiers, using a set of generic categories intended to be applicable to diverse resource sectors, geophysical regions, political entities, and cultural traditions. See Table 1 for a list of categories at the first and second tiers.

18.3. First Tier Components of the SES framework,

- 18.3.1. **Action Situation (Interactions and Outcomes):** see focal action situation above.
- 18.3.2. **Resource Units (RU):** characteristics of the units extracted from a resource system, which can then be consumed or used as an input in production or exchanged for other goods or services.
- 18.3.3. **Resource System (RS):** the biophysical system from which resource units are extracted and through which the levels of the focal resource are regenerated by natural dynamic processes.
- 18.3.4. **Users (U):** the individuals who routinely extract resource units from that resource system; these users may or may not be organized into a single user group.

18.3.4.1. Note: For purposes of generality, the category name Users should be replaced by the term **Actors**. This should facilitate the application of the SES framework to a broader range of activities.

- 18.4. **Governance System (GS):** the prevailing set of processes or institutions through which the rules shaping the behavior of the users are set and revised;
- 18.5. **Social, Economic, and Political Settings (S):** the broader context within which the governance system per se is located, including the effects of market dynamics and cultural change
- 18.6. **Related Ecosystems (ECO):** the broader ecological context within which the focal resource system is located, including the determinants of many potential exogenous influences.

18.7. Subsequent clarifications or modifications (see McGinnis and Ostrom forthcoming)

- 18.7.1. More than one instance of each of the core components (action situation, actors, resource units, resource systems, governance systems) may need to be identified for any particular application.
- 18.7.2. It may be useful to explicitly distinguish interactions that occur between elements of a pair of any two of the core components: actors, resource units, resource systems, governance systems. Note that this applies within a given category as well. That is, different governance systems may interact with each other as well as with actors or resource units or systems.
- 18.7.3. Attributes are categories of variables or factors that can be used to distinguish among different instances of a single category. Most of the items include in Table 1 are attributes of one kind or another.
- 18.7.4. This framework is intended to remain sufficiently general to encompass all factors relevant for the analysis of any mode of social-ecological interaction. Researchers must add their own theories or models to this framework, in the process of specifying particular causal paths or priorities among explanatory factors.

19. **Behavioral Rational Choice:** a second generation of rational choice theory that incorporates effects of visual and verbal cues, norms of reciprocity and fairness, and willingness to sanction rule violators
- 19.1. **Bounded Rationality:** Individual seek goals but do so under constraints of limited cognitive and information-processing capability, incomplete information, and the subtle influences of cultural predispositions and beliefs.
- 19.2. Conclusions drawn from experimental literature on human choice within public goods or CPR settings (PJO 2010)
- 19.2.1. Actors possess incomplete information about the structure of the situation in which they are interacting with others, but they may learn more complete and reliable information over time, especially in situations that are frequently repeated and generate reliable feedback to those involved.
- 19.2.2. Actors have preferences related to achieving net benefits for self, but these are combined in many situations with other-regarding preferences and norms about appropriate actions and outcomes that affect their decisions.
- 19.2.3. Actors use a variety of heuristics in making daily decisions that may approximate maximization of net benefits (for self and others) in some competitive situations but are highly cooperative in other situations.
- 19.3. **Microsituational Context:** Factors that help explain levels of trust, reciprocity norms, and cooperative behavior include (PJO 2010)
- 19.3.1. High marginal per capita return of cooperation
- 19.3.2. Security that contributions will be returned if not sufficient.
- 19.3.3. Reputations of participants are known.
- 19.3.4. Longer time horizon.
- 19.3.5. Capacity to enter or exit from a group.
- 19.3.6. Communication is feasible with the full set of participants
- 19.3.7. Size of group.
- 19.3.8. Information about average contributions is made available.
- 19.3.9. Sanctioning capabilities on levels of trust or distrust
- 19.3.10. Heterogeneity in benefits and costs.
- 19.4. **Factors Affecting Institutional Design and Selection** (EO Science 2009)
- 19.4.1. Expected up-front costs of devising and agreeing upon new rules;
- 19.4.2. Expected short-term (or start-up) costs of implementing new rules
- 19.4.3. Expected changes in operating costs (monitoring, sanctioning) of new scheme
- 19.4.4. Likelihood that proposed change can be effectively implemented
- 19.4.5. Expected improvements in benefits if this proposal works as planned

20. **Political Theory:** As used by Vincent Ostrom, political theory encompasses all efforts to understand the institutional foundation for governance, specifically involving efforts to relate philosophical principles and normative values to the practical challenges of implementing these principles and values in political institutions.

20.1. **Logic of Normative Inquiry:** Vincent Ostrom's term for a method of analysis individuals can use to reason carefully about the nature of human existence. Although human reason is imperfect and fallible, he asserts that this mode of analysis should eventually lead to conclusions such as the universal relevance of the Golden Rule and the desirability of complex systems of polycentric governance.

20.2. Here is a quick summary of the enduring influence of Hobbes, Tocqueville, and the Authors of *The Federalist* on the social philosophy articulated by Vincent Ostrom and used as the foundation for institutional analysis as conducted by scholars associated with the Ostrom Workshop:

20.2.1. **Hobbes** used an analytical technique (**normative inquiry**) used to identify the foundational dilemmas of governance, but from which he drew some mistaken conclusions;

20.2.2. The authors of *The Federalist* articulated a logic of governance that demonstrated that self-governance was indeed possible;

20.2.3. **Tocqueville** showed us how to combine observations of cultural, legal, and physical factors into a coherent mode of institutional analysis; his combination of cultural, institutional, and physical categories was a determining influence on construction of the IAD Framework;

20.2.4. In effect, *The Federalist* and Toqueville constitute **existence proofs** that disprove Hobbes' pessimistic conclusion that ultimate sovereignty must reside in a single source.

20.2.5. Hobbes acknowledges that **language** is an essential mechanism of coordination developed by communities in a state of nature, and so perhaps other forms of cooperation are also possible in the absence of a Leviathan.

20.3. **Hobbes and the Dilemmas of Governance**

20.3.1. Hobbes began by presuming that humans can understand the logic of their own condition by assuming a fundamental similitude of passions, and our frustration-filled position of being **radically alone, and yet dependent** on others for satisfaction of our basic needs

20.3.2. Hobbes concluded that anyone seriously contemplating the nature of social order would come to the conclusion that certain "articles of peace" are needed, with these articles encapsulated in the **Golden Rule** (which is of universal applicability as a basis for morality and good governance, even though adherence to this rule cannot be assured in all circumstances.)

20.3.3. Since in the absence of a common authority no one can be certain that others would obey these principles, all members of a commonwealth should transfer sovereignty to a single position of power, a Leviathan.

- 20.3.4. Given the inherent inequality of power between the Leviathan and its subjects (who are not fully citizens), the ruler could be held accountable only by God in accordance with Divine Law.
 - 20.3.5. Vincent Ostrom concludes that Hobbes did not give sufficient weight to the demonstrated ability of human communities to use language to construct complex systems of order, and thereby create a level of **common understanding** or commitment to shared goals sufficient to serve as the basis for an admittedly imperfect social order.
- 20.4. ***The Federalist*** articulates an alternative theory of sovereignty (or **limited constitutions**) in which multiple centers of authority are established so that ambitions for power that each authority would pursue could act as an effective check on the ambitions of others.
- 20.4.1. There remain fundamental problems with the **rule-ruler-ruled relationship**, since rulers by definition have a preponderance of power, at least in the short run.
 - 20.4.2. A **Faustian Bargain** is evident whenever a community assigns power or authority to some agent, who can then use that power for selfish or evil purposes.
 - 20.4.3. A complex system of rules and meta-rules as enacted and enforced by multiple authorities can manage to keep rulers accountable, albeit in an imperfect fashion.
 - 20.4.4. A science of understanding how rules operate needs to be developed if self-governing societies are to be sustainable over long periods of time.
- 20.5. In ***Democracy in America*** Alexis de **Tocqueville** provides the foundation for development of a new **“art and science of association”** needed to establish and sustain self-governing capabilities.
- 20.5.1. Tocqueville begins his analysis by discussing the physical conditions in place on the North American continent, emphasizing its favorable physical location far from the intricacies of European power relations and the abundant natural resources available for use by Anglo-Americans
 - 20.5.2. Tocqueville concludes that the mores of the American public, their habits of heart and mind, have proven more essential to the continued development of democracy than the details of its legal system or its physical location;
 - 20.5.3. Tocqueville paid particular attention to the institutions of self-governance manifested in churches, townships, and juries.
 - 20.5.4. Tocqueville identified a long-term trend towards equality in human civilization, but warned that this taste for equality could lead to the establishment of a “tyranny of the majority.”
 - 20.5.5. Tocqueville also expressed concern that capacities for self-governance are not automatically transferred to future generations, and that an excessive dependence on public authorities may undermine the long-term sustainability of democratic governance.

- 20.6. In his later books **Vincent Ostrom** stresses that Tocqueville did not anticipate some of the subtler **vulnerabilities of self-governance** in the context of modern civilization and globalization:
- 20.6.1. A **threat of relative ignorance** arises in societies with a complex division of labor, meaning that no one is in a position to fully understand any policy problem.
 - 20.6.2. The complexities of modern society enable rulers to build a system of control based on a form of **cryptoimperialism** “in which the control apparatus is concealed by a veil of secrecy behind rhetoric about ‘freedom’ and ‘liberation’” (Ostrom in McGinnis 1999a, p. 167)
 - 20.6.3. The experience of totalitarian regimes in Nazi Germany and in Communist countries made the 20th century a tragic period of “**great experiments and monumental disasters**”
 - 20.6.4. Hopes for the future lie in the empowerment of peoples throughout the world to participate more fully in their own governance, and an essential start can be taken by supporting the survival and strengthening of those languages and cultural traditions in danger of being eliminated by globalization.

IV. Other Terms

21. Acronyms of Related Organizations or Programs

- 21.1. **CIPEC**: Center for the Study of Institutions, Population, and Environmental Change, Indiana University.
- 21.2. **CSID**: Center for the Study of Institutional Diversity, Arizona State University
- 21.3. **DLC**: Digital Library of the Commons, Indiana University.
- 21.4. **IASC**: International Association for the Study of the Commons (originally IASCP for International Association for the Study of Common Property)
- 21.5. **IE Lab**: Interdisciplinary Experimental Laboratory, Indiana University.
- 21.6. **IFRI**: International Forestry Resources and Institutions, University of Michigan.
- 21.7. **SPEA**: School of Public and Environmental Affairs, Indiana University.

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Basic Components of the IAD Framework

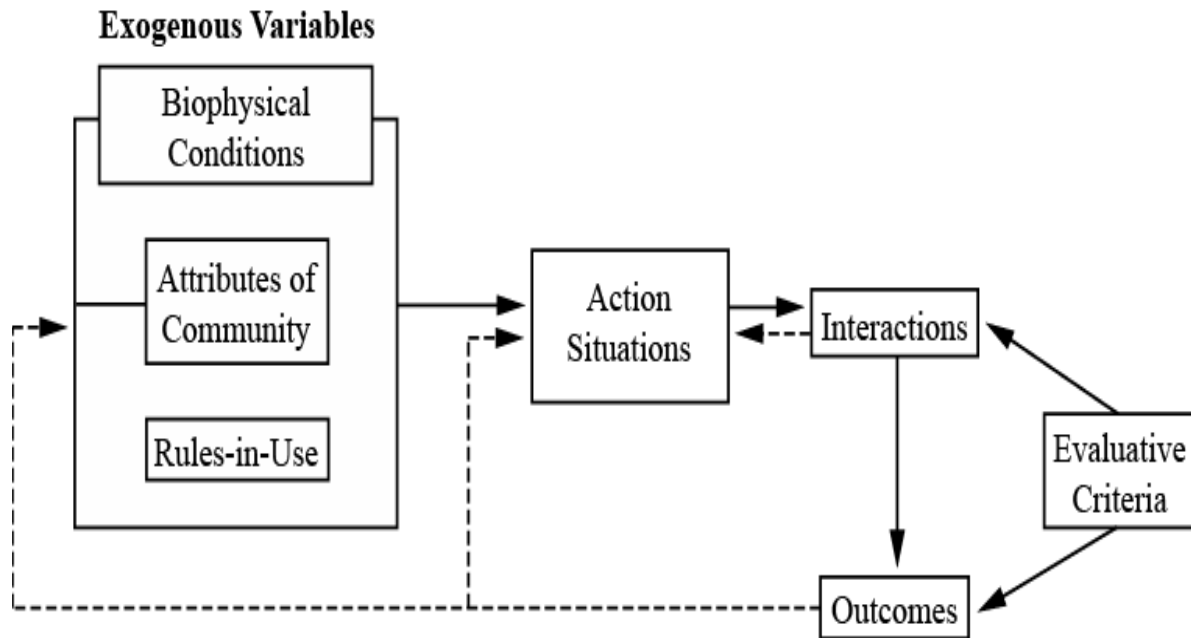


Figure 2. A framework for institutional analysis. Adapted from E. Ostrom (2005: 15).

Source: Ostrom 2010, 646.

Social-Ecological System (SES) Framework (McGinnis and Ostrom 2011)

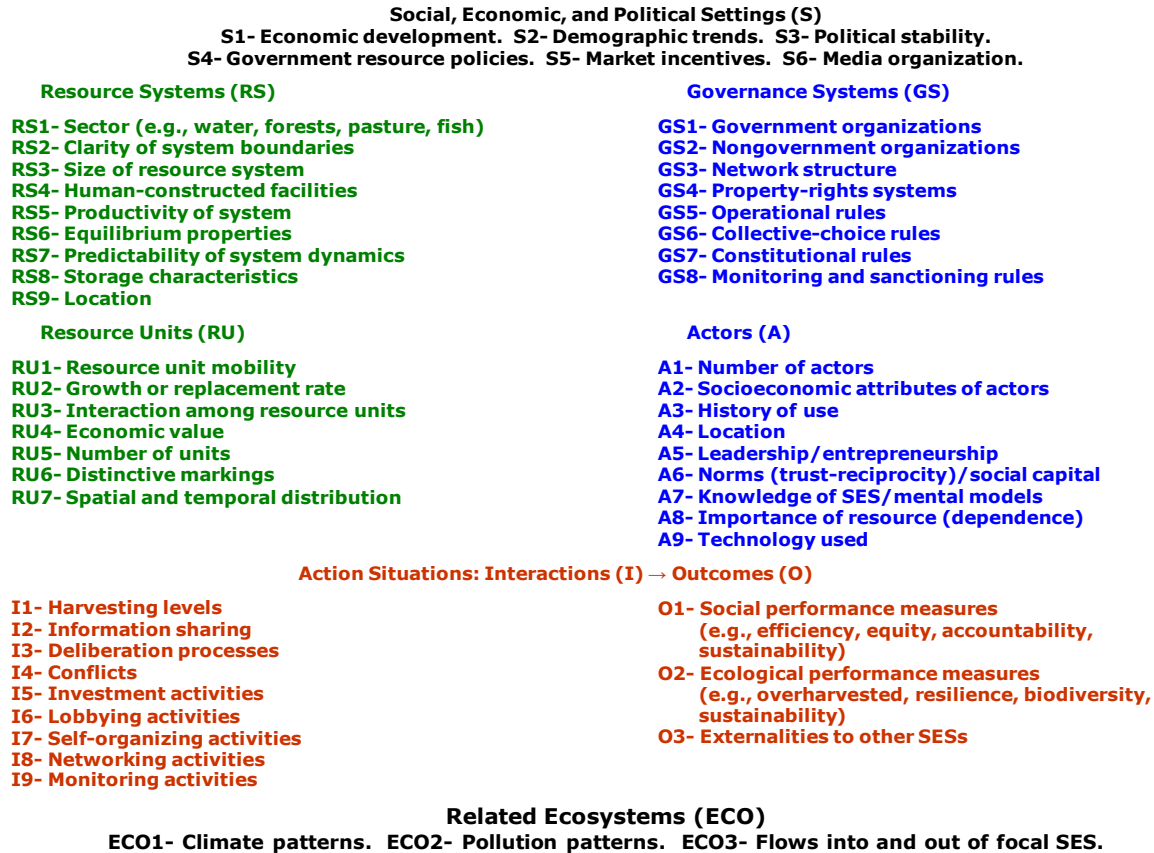
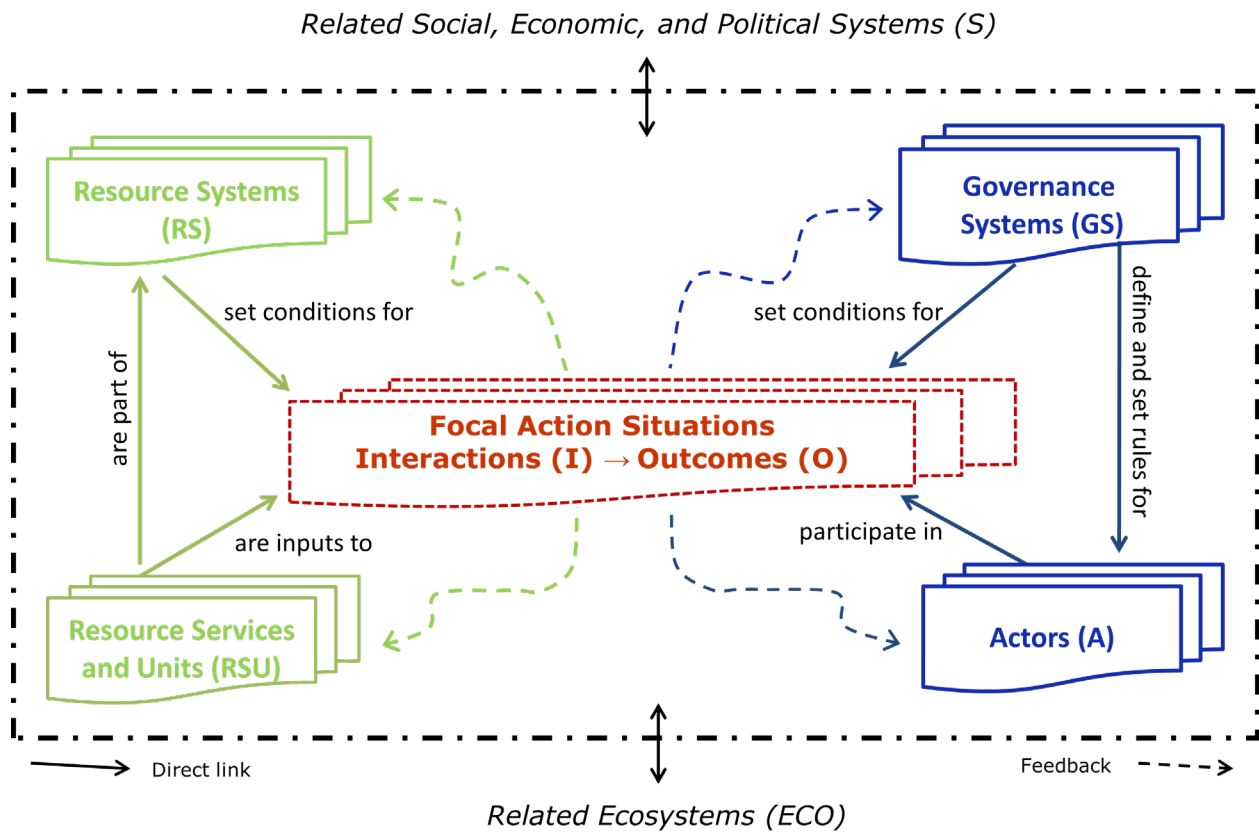


Figure 2: Second-Tier Variables of an SES



Revised SES Framework with Multiple First-Tier Components