Preface

The central question underlying this course is: How can fallible individuals achieve and sustain self-governing entities and self-governing ways of life? In other words, how can individuals influence the rules that structure their lives? This is a particularly challenging question in an era when global concerns have moved onto the political agenda of most international and national governing bodies.

A self-governing entity is one whose members (or their representatives) either participated in the development of many of the constitutional and collective choice rules-in-use or accept the legitimacy and appropriateness of these rules. All self-organized entities--whether in the private or public spheres--are to some extent self-governing. In modern societies, it is rare to find any entity whose members (or their representatives) have fashioned all constitutional and collective-choice rules. On the other hand, even in a totalitarian polity, it is difficult for central authorities to prevent all individuals from finding ways of self-organizing and creating rules of their own making that may even be contrary to the formal laws of the totalitarian regime. Given that most modern societies have many different entities, let me rephrase the central question to be: How can fallible individuals achieve and sustain large numbers of small, medium, and large-scale self-governing entities?

This question cannot be thoroughly answered in any semester-long or year-long course of study. It is the question that has puzzled and perplexed the greatest thinkers of the last several millennia. Many have answered that self-governance is impossible. In this view, the best that human beings can do is live in a political system that is imposed on them and that creates a predictable order within which individuals may be able to achieve a high level of physical and economic well-being without much autonomy. In this view, the rules that structure the opportunities and constraints that individuals face come from outside, from what is frequently referred to as "the state."
For others, rules are best viewed as spontaneously emerging from patterns of interactions among individuals. In this view, trying to design any type of institution—whether to be imposed on individuals or self-determined—is close to impossible or potentially disastrous in its consequences. Human fallibility is too great to foretell many of the consequences that are likely to follow and efforts to design self-governing systems rather than making adaptive changes within what has been passed along from past generations involves human beings in tasks that are beyond them.

The thesis that we advance in this seminar is that individuals who seriously engage one another in efforts to build mutually productive social relationships are capable of devising ingenious ways of relating constructively with one another, but rarely are individuals able to design entire social systems that avoid the fate of being monumental disasters. Individuals using trial and error to evolve and design rules, routines, and ways of life are the most likely to succeed in devising self-governing entities that have the most chance of adapting and surviving over time. These successful groups may exist in simple or complex nested systems ranging from very small to very large. The problem is that one needs effective organizations at all levels ranging from the smallest work team all the way to international organizations. If the size of the group that is governing and reaping benefits is too small, negative externalities are likely to occur. Further, even in small, face-to-face groups some individuals may use any of a wide array of asymmetries to take advantage of others. Individuals who are organized in many small groups nested in larger structures, however, may find ways of exiting from some settings and joining others or of seeking remedies from overlapping groups that may reduce the asymmetries within the smaller unit. If the size of the group that is governing and reaping benefits is too large, on the other hand, essential information is lost and further, the situation may change from one of adaptive problem solving to one of exploitation.

Scale and complex nesting are only part of the problem. Another part has to do with how individuals view their basic relationships with one another. Many individuals learn to be relatively truthful, considerate of others, and willing to work hard. Others are opportunistic. Some approach governance as involving basic problem-solving skills. Some approach governance as a problem of gaining dominance over others. The opportunities for dominance always exist in any system of rule-ordering where some individuals are delegated responsibilities for devising and monitoring conformance to rules and sanctioning rule breakers. Those who devise self-governing entities that work well only when everyone is a "saint" find themselves invaded by "sinners" who take advantage of the situation and may cause what had worked successfully to come unglued and fail.

Thus, the answer I give to the question is: Self-governance is possible in a setting, if . . .

most individuals share a common understanding of the physical worlds they face, of the importance of trying to follow general principles of reciprocity and fairness, and that artisanship can be used to craft their own rules;
most individuals have significant experience in smaller settings where they learn the skills of living with others, being responsible, gaining trust, and holding others responsible for their actions;

considerable autonomy exists for constituting and reconstituting relationships with one another that varies from very small to very large units (some of which will be highly specialized while others may be general-purpose organizations);

individuals learn to analyze the incentives that they face in particular situations (given the type of physical and cultural setting in which they find themselves) and to try to adjust positive and negative incentives so that those individuals who are most likely to be opportunistic are deterred or sanctioned;

the ideas and principles used in constituting multitiered self-governing entities are sufficiently understood as a "science of association" that as new individuals replace those who have taken initial responsibility for trial and error learning. The theoretical ideas and principles are continually articulated and learned by new participants.

The above is posed as a "possibility" not a determinate outcome. In other words, we view self-governing entities as fragile, social artifacts that individuals may be able to constitute and reconstitute over time. We can make scientific statements about what kinds of results are likely if individuals share particular kinds of common understandings, are responsible, do have autonomy, possess analytical tools, and consciously pass both moral and analytical knowledge from one generation to the next. These are strong conditions! I have not tried to develop a formal argument for these conditions, but John Williams and I have talked about some of the impossibility theorems that are implied in the above and promised ourselves that we will tackle this problem in the near future.

With this view, self-governing entities may exist as an enclave in the midst of highly authoritarian regimes. This may not be a stable solution, but self-governance may provide opportunities to develop productive arrangements for those who establish trust and reciprocity backed by their own willingness to monitor and enforce interpersonal commitments. If the macro structure is not hostile, or even supports and encourages self-organization, what can be accomplished by smaller private and public enclaves can be very substantial. This is initially a bottom-up view of self-governance. Productive, small-scale self-organization, however, is difficult to sustain over time in a larger political system which tries to impose uniform rules, operates through patron-client networks, or uses terror to sustain authoritarian rule. Having vigorous local and regional governments and many types of voluntary associations is part of the answer, but not sufficient in and of itself.

Simply having national elections, choosing leaders, and asking them to pass good legislation, is hardly sufficient, however, to sustain a self-governing society over the long run. Electing officials to national office and providing them with a "common budgetary pool" of substantial size to spend "in the public interest" creates substantial temptations to engage in rent-seeking behavior and distributive politics. The central problem is how to
embed elected officials in a set of institutions that generates information about their actions, holds them accountable, allows for rapid response at times of threat, and encourages innovation and problem solving. Solving such problems involves the design of a delicately balanced system. It requires decisions from sophisticated participants who understand the theory involved in constituting and reconstituting such systems and share a moral commitment to the maintenance of a democratic social order.

Now, what is the role of the institutional analyst in all of this? Well, for one, it is essential for those who devote their lives to studying the emergence, adaptation, design, and effects of institutional arrangements to understand a very wide array of diverse rules that exist in an equally diverse set of physical and cultural milieus. To understand how various rules may be used as part of a self-governing society, one has to examine how diverse rules affect the capacities of individuals to achieve mutually productive outcomes over time or the dominance of some over others. Eventually, one has to examine constellations of embedded institutional arrangements rather than isolated situations. And, one has to examine the short-run and long-run effects of many different types of rules on human actions and outcomes. Further, one has to acquire considerable humility regarding exactly how precise predictions can be made about the effects of different rules on incentives, behavior, and outcomes achieved. Design of successful institutions may indeed be feasible. Designed institutions which tend to generate substantial information rapidly and accurately and allow for the change of rules over time in light of performance, are more likely to be successful than those resulting from "grand designs" for societies as a whole.

To be an institutional analyst, one needs to learn to use the best available theoretical tools, while at the same time trying to develop even better theories and conducting further empirical studies that contribute to our theoretical understanding of self-governing systems. All tools have capabilities and limits. The task of the skilled artisan--whether an institutional theorist or a cabinet maker--is to learn the capabilities and limits of all tools and how best to use a combination of tools to address the wide diversity of puzzles that one comes across in a lifetime of work.

The tools that we have to address the puzzle of whether self-governing entities are both plentiful and limited. They are plentiful in the sense that we do have an extensive body of political, social, and economic theory that focuses on the impact of diverse rules on the incentives, behavior, and likely outcomes within different settings. These tools are limited in that many of the most rigorous theories make assumptions both about the individual and about the settings within which individuals find themselves. These explicit, and often implicit, assumptions mask some of the deeper problems of sustaining democratic systems over time. Many of the difficult problems that human beings face in trying to develop and sustain democratic organizations are assumed away when one starts with assumptions that individuals have complete and perfect information and can make error-free calculations about expected consequences in complex, uncertain worlds. Further, when assumptions are made that the structure of the situations facing individuals is fixed and cannot be changed by those in the situation, little effort is devoted to addressing how individuals affect their own situations. And yet, these same assumptions
(full information and fixed structures) are useful when the analyst wants to examine the expected, short-term outcomes of an institutional and physical setting where the options available to individuals are narrowly constrained and where individuals have many opportunities to learn about the costs and benefits of pursuing diverse options. Which assumptions, theories, and models to use to analyze diverse institutional arrangements are an important aspect of the training of institutional analysts.

During this seminar we will use a variety of theoretical and modeling tools--which we will use to help us to understand the institutional analysis and development (IAD) framework that we have been developing over many years at the Workshop. The skilled institutional analyst uses a framework to identify the types of questions and variables to be included in any particular analysis. The artisan then selects what is perceived to be the most appropriate theory available given the particular questions to be addressed, the type of empirical evidence that is available or is to be obtained, and the purpose of the analysis. For any one theory, there are multiple models of that theory that can be used to analyze a focused set of questions. Choosing the most appropriate model (whether this be a mathematical model, a simulation, a process model, or the design for an experiment) also depends on the particular puzzle that an analyst wants to examine.

**Objectives of the Course**

Given the above background to the substantive focus of this seminar, let me try to present the central objectives for the semester as I see them. The objectives are:

- To understand the constraints and opportunities of human artisanship.

If self-governance within any particular organizational setting is only a possibility and not a necessity, then students of self-governance need to understand the constraints on choice presented by the structure of a physical, biological, and social world at any particular point in time as well as the opportunities of using human insight, reason, persuasion, and vigilance to transform inherited structures.

- To learn how to use the Institutional Analysis and Design (IAD) framework as a tool for understanding the commonalities underlying entities that are often treated by diverse disciplines as fundamentally different things.

Markets and States are frequently posed as opposite types of entities. Those who study the American Presidency or the American Congress sometimes view what they study as entirely different from European Parliamentary systems, or some of the national systems of Africa or of Asia. We will instead use a common set of elements to analyze repetitive relationships within and across markets, hierarchies, local communities, private associations, families, churches, regional governments, national governments, multinational corporations, and international regimes.

- To learn to use game theory as *one* of the theories that is consistent with the IAD framework.
Game theory is emerging as one of the theoretical tools in heavy use across all of the social sciences (as well as in biology). Game theory is useful for the institutional analyst when trying to understand the patterns of outcomes that result from the operation of a repetitive situation over time when the motivational structure of participants is clearly understood. It also provides a theoretical tool for analyzing what to expect when rules are changed. As will become obvious in the semester, there are also many perplexing issues that are not yet resolved both about the theory of games and its applications to the study of institutions. We will do some reading drawing more on an evolutionary perspective and how this perspective combined with game theory helps us understand some of the above issues.

- To recognize core problems that humans repeatedly face in a wide diversity of settings such as those involved in providing and regulating the use of public goods and common-pool resources, asymmetric information problems, adverse selection problems, moral hazard problems, aggregation of preferences problems, team coordination problems, principal-agent problems, and the problems of constituting complex orders under incomplete information.

All of the above problems--and many more--constitute the grist for political action. Learning how to recognize the key symptoms of the core problems that humans repeatedly face is essential for institutional analysts. Diagnosis of the source(s) of the problems involved in a simple or complex setting is necessary prior to effective advice about the types of rules, norms, and strategies that have a chance to improve on outcomes.

- For students of global change, to understand the importance of institutions in affecting physical and biological processes and aspects of the problems of scaling up and down.

A key substantive area that is addressed frequently throughout the semester is that of environmental change in domains ranging from very small to global in scope. Other substantive areas are also addressed, but since this course will become one of four core courses in an interdisciplinary curriculum focused on global change issues, students with these interests are encouraged to participate.

- To explore the question of how institutional arrangements affect the capabilities and information available to individuals--and thus, the kinds of theories (and models) of individual behavior we can effectively utilize.

This question is at the core of many of the current intellectual disputes and criticisms made of using rational choice theory or individualistic theories of any kind. This is an "advanced" topic, but one that is so central for all students of institutional analysis that it will be included even though many of the other materials in the seminar are introductory in nature.
• To conduct an institutional analysis of an important and interesting puzzle relating to human behavior in a rule-ordered setting at a local, regional, national, or international domain.

Each enrolled student and most visiting scholars will write a paper to be presented at the MiniConference on December 11 or 13 that is an institutional analysis of a structured situation or linked set of situations that generate outcomes that are either puzzling, deemed inefficient, inequitable, unsustainable, in need of change or worthy of emulation.

**Procedures and Requirements for the Fall Semester**

During the fall semester of this year-long course we try to provide an overview of the literature focusing on the analysis of individual behavior within various types of institutional arrangements. Many of the topics covered here in one week could well be the topic of a full semester's work in some other course or seminar. Thus, once you have completed this fall's work, you will have been introduced to a diversity of work but you will not yet have gained mastery and will need substantial additional study to gain that mastery. Fortunately, there are several other courses offered regularly in the Department of Political Science, the Department of Economics, or the School of Public and Environmental Affairs that can be taken to gain additional mastery. For some subjects, we have listed additional readings that you may wish to pursue during this semester or later in your academic career on those topics of particular interest and importance to you.

The assigned readings will either be distributed at least one week in advance or be at the IU bookstore. Books ordered for the course are:


Graduate students taking the course for credit have four types of assignments. First, each student is expected to write a short (2-5 pages) memo to be distributed among students every second week starting on September 7, reflecting on what they are currently reading and related topics. From time to time, I will ask for comments on a particular subject. These memos are due in my mailbox and in each student's mailbox at the Workshop on
Park Street by 5:00 p.m. each Tuesday. Memos may be sent via email. I will read all of
the memos by Thursday morning and use them to organize part of the discussion during
the Thursday session. These memos are not individually graded, but 25% of the final
grade will be based on class participation, and the faithfulness and quality of the memos
will be reflected in this part of the grade.

Second, during finals week, there will be a two-hour examination given. Prior to this
week, you will be asked to contribute potential questions for this exam and I will hand
out a series of questions from which I will draw some questions for the examination.
Students will be given one or two times during the week when they could come in and
take the two-hour examination in the seminar room or colloquium room of the Workshop.
The final will constitute 25% of the final grade.

Third, a final paper is required. Each student and visiting scholar will be expected to
select either a type of problem (such as that of providing a particular type of public good
or common-pool resource) or a type of decision-making arrangement (such as that of a
legislature or self-organized collectivities) and undertake an analysis of how
combinations of rules, the structure of the goods and technology involved, and culture
interact to affect the incentives facing individuals and resulting patterns of interactions
adopted by individuals. The student may focus more on an operational, a collective
choice, or a constitutional-choice level, but the linkage among these levels should be
addressed. Some participants are interested in large-scale phenomena and will want to
examine international or national regimes. Others will focus on a smaller scale of
organizations. Some may want to address the "scaling up" and "scaling down" question in
institutional analysis. This is an excellent opportunity to do a research design for a
dissertation that applies institutional analysis to a particular problem. Students may wish
to do the first draft of a paper that eventually will be submitted for publication. All papers
will be presented at a MiniConference at the end of the semester. The final paper is due
December 2nd and constitutes 50% of the final grade.

The MiniConference at the end of the year (December 11 and 13, 1999) is the occasion
during which visiting scholars, students in this seminar, and other Workshop colleagues
present papers summarizing their work for the semester. The final paper will be discussed
at the MiniConference.

The seminar will meet on Tuesday evening at 7:00 p.m. on August 31 (because of
APSA meetings), and on Tuesday evening at 7:00 p.m. on September 21 (because of
the Johan Skytte Award in Sweden).

**SCHEDULE OF TOPICS: FALL TERM 1999**

Week 1: August 31 An Overview. Frameworks, Theories, and Models

Week 2: September 9 Human Choice, Artifacts, and Artisanship
September 10 Decision-Making Experiment

Week 3: September 16 Simple Action Situations and Normal Form Games

Week 4: September 21 Global and Local Scaling Up and Down

Week 5: September 30 Dynamic Interactions and Extensive Form Games

Week 6: October 7 Rules, Norms, and Strategies

Week 7: October 14 Incomplete Information and Signaling

Week 8: October 21 Collective Action and Reciprocity: How Can Solutions be Sustained?

Week 9: October 28 Collective-Choice Processes

Week 10: November 4 Hierarchical Forms of Organization and Their Control

Week 11: November 11 Industry Structure--Public and Private

Week 12: November 18 Repetition, Reputation, and Multilevel Games

Week 13: November 25 Thanksgiving - No class

Week 14: December 2 Polycentric Systems

Week 15: December 9 Constituting and Reconstituting Multiagent, Multilevel, Overlapping Realms of Local, National, and International Regimes

MiniConference: December 11 and 13, 1999

COURSE DESCRIPTION

Week 1: Tuesday, August 31, 7:00 p.m. (Special Opening Session)

Overview of Semester. Frameworks, Theories, and Models

Each member of the seminar will be expected to read the syllabus and to have begun to think about how their own work might be related to the general work to be covered during the fall semester. We will discuss the general organization of the fall semester's work. There are several key issues that we will discuss during this class. They include:
the differences among frameworks, theories, and models--and how various theories (and models of these theories) can be used to analyze particular questions using the institutional analysis framework;

the importance of both equilibrium and nonequilibrium ways of thinking;

the importance of both static and dynamic analyses when thinking about institutional questions;

when single-level analysis is appropriate and when multiple levels of analysis should be invoked;

thinking about whole systems and thinking about parts;

thinking about impossible and possible rather than only necessary and sufficient.

A central theme of the entire year's seminar is that human organization is the result of layers and layers and layers of conscious and unconscious structuring--both within the single individual and within any organized polity. To study institutions, there is no single, correct level of analysis. To ask any particular theoretical or empirical question, however, an analyst can generate more useful information by starting to address that question at one level instead of others. That is the central message of Hofstadter's "Ant Fugue." His provocative way of developing this argument will, hopefully, supplement the argument for multiple levels made in other papers throughout the semester. Lave and March provide a simple approach for understanding the usefulness of producing models for social analysis.

**Essential Readings for Week 1:**

Syllabus


Week 2: September 9

**Human Choice, Artifacts, and Artisanship**

The neoclassical model of the individual used by economists in theoretical and empirical studies of market behavior has proved to be a robust and powerful model both for its usefulness in explaining choices in market situations but also as the foundation for explaining choices in other well-structured situations, including many collective action situations. Most game theoretic analyses of market and collective action settings use a very clearly specified model of the individual and of the situation in which the modeled individuals find themselves. Game theory has proved particularly relevant for the study of rules.

The assumptions of rational choice theory have been criticized on a number of fronts--primarily for their lack of reality. There is an extensive supplemental bibliography for this week for those who wish to read widely on the subject of rational choice. Given the very substantial empirical evidence that human behavior frequently does not conform to the neoclassical model, one has to take the criticisms seriously. On the other hand, one does not lightly discard a highly powerful and very useful model of human choice-making behavior.

The stance that I take in this seminar is that one should retain the neoclassical (or, game theoretical) model as one, but not the exclusive, model of the individual to be used in conducting institutional analyses. In other words, this is one of the tools of the trade and an institutional analyst should know this tool well. Knowing a tool well means knowing its capabilities and its limitations. This model is particularly useful in regard to the following three tasks:

1. Undertaking a theoretical analysis of what a fully informed and narrowly self-interested person would do in a particular type of well-defined situation.

James Buchanan has frequently argued that an essential analysis of any particular institutional arrangement must examine what strategies would be selected by individuals who are selfish, opportunistic, and calculating. If these strategies lead to optimal outcomes for others--as they do in a highly competitive market--the institutional arrangement is quite robust to the type of individuals who will be using it. If these strategies lead to suboptimal outcomes, then one is alerted to the problems that the naive use of the institutional arrangement might produce. The use of the neoclassical model of the individual enables one to examine how vulnerable a particular institutional arrangement is to the calculations of a narrow hedonist.
2. Undertaking a normative analysis of what fully "rational" persons should do in a particular type of highly structured and repetitive situation.

Many game theorists view game theory as a "theory of advice" for how to be rational in diverse situations. In light of many of our readings this semester, one might recast this normative view of game theory so that it is viewed as a theory of advice for individuals facing situations of relating to strangers where no trust and reciprocity has been developed. The same theory might not offer good advice for how to behave rationally in settings where individuals know each other's identity, have established a real sense of community and reciprocity, and expect to relate to one another over a very long time. It is these latter problems that are causing a considerable amount of ferment and reconsideration among thoughtful scholars.

3. Undertaking a positive, theoretical analysis in those situations that are tightly constrained, where the actions and outcomes are clearly known, and where some single value--such as profit or likelihood of reelection--can serve as an external indicator of utility.

My strong recommendation to anyone who plans to study institutional arrangements is that they should be well trained in at least one formal method for analyzing individual choice. Game theory is a very powerful formal modeling tool for the institutional analysts and can be applied to many diverse situations in a fruitful manner. Sometimes the usefulness of a game theoretical analysis is to provide a clear picture of what would happen in a setting where all decisions are made independently and little opportunity for communication, gaining common agreement, and the development of norms exist. This then becomes a powerful "zero" model for comparison with behavior in richer settings.

In some highly competitive settings, predictions made using rational choice theory are very close to observed outcomes because competition drives out those participants whose choices are much different from those made by a rational player. In such settings, rational choice models go far in helping analysts predict behavior.

The key question facing institutional analysts who wish to undertake positive analyses of less structured and certain situations is what modifications in the neoclassical theory are the most likely to generate useful predictions in particular kinds of settings? Thinking of human behavior as adaptive is one approach that is discussed by Vincent Ostrom and by Leda Cosmides, John Tooby, and Jerome Barkow. Herbert Simon retains the fundamental presumption that individuals compare benefits against costs, but relaxes the assumptions about how finely values are measured and the type of calculation process presumed. If one adds to the important work of Simon, the work of Kahneman and Tversky (and others) on perception and framing effects and of Coleman (and others) on the adoption of norms of behavior, one begins to gain a model of a fallible learner who develops routines, heuristics, or SOPs (standard operating procedures) for coping with much of life that may reflect more or less opportunistic behavior dependent upon both personal and social developments. Further, recent work on evolutionary theory applied to language, culture, and social relations is also providing useful insights to the central questions we will be
addressing. We do need to develop an integrated approach in the social sciences that does not see our approach as totally apart from the biological foundations of human behavior. In an institutional milieu that is highly competitive, the external structure may be so selective that those who survive can be thought of as having maximized whatever value is needed for survival. But, many environments do not have such strong selection pressures. Thus, the neoclassical model becomes one--but not the only--model of the individual that the institutional analyst can use. In his classic article on "rationality," Popper gives us some very good advice: rest as much of your analysis on the structure of the situation rather than on the model of the individual.

On September 10, we will have a special class session in which we conduct a decision making experiment. We will tentatively schedule this from 12:00 noon to 2:00 p.m., but we will need to verify the time once everyone knows their full course schedule for the semester.

**Essential Readings for Week 2:**


**Supplemental Readings:**


Simple Action Situations and Normal Form Games

The concept of an action situation is one way to identify a "smallest relevant unit of analysis" for comparative research. These concepts have been used to design 1) the various Workshop databases developed to study the effects of institutions on incentives to provide and appropriate from common-pool resources; 2) many of our qualitative studies; 3) game theoretical analyses and 4) experimental studies in the laboratory. One way of modeling a theory of how a particular action situation is structured, the likely behavior of participants, the consequences that are likely to be produced and an evaluation of those consequences is by using formal game theory. The language of game theory is being used across the social sciences to analyze a wide diversity of interesting questions.

In Chapters 1 and 2 of Rules, Games, and Common-Pool Resources, Roy, Jimmy, and I try to provide a concise overview of the problem of analyzing common-pool resources and of the IAD framework that we have been using to design both experimental and field experiments.
empirical research projects related to the study of common-pool resources over the past decade.

**Essential Readings for Week 3:**


Ostrom, Elinor, Roy Gardner, and James Walker (1994) *Rules, Games, and Common-Pool Resources*. Chapters 1, 2, and 3. [IU Bookstore]

**Supplementary Readings on IAD Framework:**

The IAD framework has been described by many Workshop colleagues. You may want to read additional examples since each provides further insight:


Similar efforts to identify a "smallest relevant unit of analysis" have used such terms as: collective structures, transactions, frames, and the other terms listed below. The following is an initial bibliography of key works that describe other efforts to identify units of analysis that are very similar to the concept of an action situation:

**Collective Structure:**

Events:


Frames:


Logic of the Situation:


Problematic Social Situations:


Scripts:


Transactions:


Units of Meaning:

For a book that is informed by formal game theory but is devoted to teaching future negotiators the logic of situations, see:


**Week 4: Tuesday, September 21 (meet at 7:00 p.m.)**

**Global and Local Scaling Up and Down**

Paul and Anne Ehrlich (1991) *[Healing the Planet: Strategies for Resolving the Environmental Crisis]*. Reading, Mass: Addison Wesley, p. 7], propose a three-variable causal model to explain global environmental impact:

\[ I = P \times A \times T, \]

where

\[ I = \text{impact on the environment}, \]

\[ P = \text{population size}, \]

\[ A = \text{affluence (measured by levels of consumption), and} \]

\[ T = \text{technologies employed}. \]

The \( I = PAT \) formula has become the basic equation for many scholars interested in global environmental problems and the intellectual orientation of those calling for strong measures to be undertaken by international or national governments.

The article by Robert Kates in the October 1994 issue of *Scientific American* illustrates one of the more thoughtful articles reflecting on global patterns and the \( I = PAT \) formula. Kates does raise the possibility that institutional arrangements may evolve that can affect how population, consumption, and technology interact. Kenneth Arrow and many others associated with the Beijer Institute at the Swedish Academy of Sciences wrote a thoughtful essay in *Science* that addresses many of these same issues. In 1992, Mike McGinnis and I attempted to apply some of the lessons we had learned at the local level to global questions. We received some very interesting comments on that effort. Clark Gibson, T.-K. Ahn, and I have reviewed the considerable literature on scaling up and down, and Emilio Moran, J.C. Randolph, and I have tried to fit these complexities into a multitier framework.

**Essential Readings for Week 4:**


**Supplemental Readings:**


**Week 5: September 30**

**Dynamic Interactions and Extensive Form Games**

We will now tackle more complex situations where actions occur over time and sequences makes a big difference. Read Dixit and Nalebuff first. Then read the Milgrom,
North, and Weingast article. While Milgrom et al. do not draw the game in extensive form, they are dealing with a problem involving timing and sequence. They are also dealing with a substantive question of major concern to this semester: How is it possible for individuals who would like to benefit from engaging in trade that extends over space and time to make credible commitments when governmental boundaries do not include the domain of their trade? Put another way, how can complex contracts be enforced without the prior existence of a national state? How could Axelrod's solution be implemented in a real world situation?

**Essential Readings for Week 5:**


**Supplemental Readings on Game Theory and Its Foundations:**


**Week 6: October 7**

**Rules, Norms, and Strategies**

Rules can be expressed linguistically as the "mays," "musts," and "must nots" that affect all of the working parts of any action situation including a market. What type of variables are these? When do we know that humans are following a set of rules? How can we begin to develop a technical language to talk about rules in a careful manner? How can we know if the rules of one system are similar to or different from the rules of another system? The concept of "working rules" comes from John R. Commons and the introduction to his book gives you a brief overview of his approach. James Coleman provides an important set of insights about the concept of norms. Sue Crawford and I have struggled mightily with the concepts of rules, norms, and equilibrium strategies and how to relate these. The fourth chapter in *Rules, Games, and Common-Pool Resources* begins to lay out an analysis of how rule configurations affect the structure of games. North's chapter provides an important example that deals with an important substantive topic in this seminar.

**Essential Readings for Week 6:**


Ostrom, Elinor, Roy Gardner, and James Walker (1994) *Rules, Games, and Common-Pool Resources*. Chapter 4. [IU Bookstore]
Supplemental Readings:


Week 7: October 14

Incomplete Information and Signaling
Review Dixit and Nalebuff on games of incomplete information. The same issues are addressed in the *Institutional Incentives* volume but without using game theory overtly. Avner Grief gives us an excellent sense of how diverse cultural ties solve some of the problems of incomplete information and signaling. Akerlof provides a wonderful example of how incomplete information is important for understanding markets for experience goods. And Krehbiel's theoretical chapter on signaling in Congress is a very understandable presentation based on solid and technical work available elsewhere.

**Essential Readings for Week 7:**


**Supplemental Reading:**


**Week 8: October 21**

**Collective Action and Reciprocity: How Can Solutions be Sustained?**

The chapters assigned from *Rules, Games, and Common-Pool Resources* related to one type of collective action, but one that has many more manifestations than commonly thought. Notice the theoretical explanation provided for behavior in the experimental laboratory that is not consistent with predictions from noncooperative game theory. The paper by Hoffman, McCabe, and Smith raises important questions about how evolutionary theory may help theorists understand how reciprocity can emerge and be sustained in some settings, but also recognize that the regularities observed by Hoffman, McCabe and Smith—as well as by our own research in the field and in the lab—are relevant to smaller scale collective action problems.

**Essential Readings for Week 8:**


**Supplemental Readings:**


**Week 9: October 28**

**Collective-Choice Processes**
While many social choice theorists view legislative choice as a single-layered situation—"policy" is the outcome of the game—from an IAD framework, collective-choice processes are always middle-level situations. The rules of collective-choice processes are set (for the short-run) by the outcomes of previous constitutional-choice processes. The literature on collective-choice processes is extensive and we examine only a tiny spectrum of this literature here and primarily from the perspective of what difference do alternative decision rules make on the outcomes of collective-choice processes. Riker and Shepsle and Weingast have quite different views of the equilibrium properties of collective choice properties. How could these ideas be generalized beyond simple voting games to more generalized systems as defined by the IAD?

**Essential Readings for Week 9:**


**Supplemental Readings:**


**Week 10: November 4**

**Hierarchical Forms of Organization and Their Control**

Hierarchy has been viewed within public administration theory as one of the "ideal" forms of organization in which considerable control over subordinates is exercised by superiors. Recent work on institutional analysis has raised serious questions about this image. The key issue is how control is exercised both within bureaus and among bureaus. If you think Gary Miller is on to something, check out his full volume listed in the supplemental readings.

**Essential Readings for Week 10:**


**Supplemental Readings:**


**Week 11: November 11**

**Industry Structure--Public and Private**

Firms and public bureaus are held accountable both by various types of internal mechanisms—the topic of last weeks assignments, and by the patterns of interaction across markets and within industries. When one analyzes industry structure, one is focusing on an emergent structure that then impacts the behavior within firms. Needless to say, the nature of such structures is diverse.

**Essential Readings for Week 11:**


Supplemental Readings:


**Week 12: November 18**

**Repetition, Reputation, and Multilevel Games**

Again, review the appropriate parts of Dixit and Nalebuff. Then, read Putnam's paper which is a framework for thinking about how multiple agents pay multilevel games. McGinnis's paper presents a broad multi-agent framework for analyzing international relations. Williams, Collins, and Lichbach provide a simple reputation game that has interesting implications for the idea of credibility.

**Essential Readings for Week 12:**


**Supplemental Readings:**


**Week 13: November 25 Thanksgiving - No Class**

**Week 14: December 2 (submit questions for final examination)**

Each student should submit two questions on December 2 for the final examination to be held after the MiniConference. Also, please submit the title of your MiniConference paper on December 2 plus a 3-5 sentence abstract.
The energy that has been expended on "the individual" vs. "the system" has generated lots of heat, but not the insight that comes from recognizing that all explanations must ultimately involve both an understanding of how individuals perceive, think, value, and decide as well as how the structural constraints of the situations in which they find themselves affect outcomes. The article by Michael Cohen illustrates both that (1) boundedly rational individuals are able--because of the structure they are in--to produce close to rational results, and (2) the structure itself affects how well they perform. Mark Sproule-Jones concludes his analysis of the Canadian Federal system and its impact on a resource in a manner that is very useful for our consideration. Robert Putnam is raising some very substantial issues about the long-term sustainability of the American Federal System. His focus is overtly on social capital and trust, but the implications for the continuity of a political system that requires citizens who understand "the science of association" and engage in reciprocity are substantial. Weingast turns particularly to the structure of federal systems and some of their consequences. Finally, Holt uses a great example to show the problems that will be encountered by centralizing information and regulatory structures in a way that is inconsistent with the nature of the physical and social environment.

**Essential Readings for Week 14:**


**Supplemental Readings:**


Constituting and Reconstituting Multiagent, Multilevel, Overlapping Realms of Local, National, and International Regimes

Analysis of institutional change is among the most difficult topics to be covered in this semester. So many different variables potentially affect how individuals constitute and change institutions over time. For some scholars, institutional change has been viewed as a process leading to ever better institutions. For others, it is simply the result of the most powerful exerting their continued dominance over a situation. An institutional analyst must recognize that changes in rules do not always lead to increased welfare both because of ignorance and because of opportunistic behavior. A key question is how to analyze changes of rules within rules so as to understand under what conditions individuals may improve their general welfare with time.

Essential Readings for Week 15:


Supplemental Readings:


