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A POLITICAL ECONOMY APPROACH TO THE ANALYSIS OF INSTITUTIONAL BEHAVIOR AND CONSEQUENCES

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DRAFT

This is a preliminary draft of the first sections of a manuscript in progress. Samuel Long is editing the Handbook of Political Behavior and asked us to write the chapter on Political Economy. We are already overdue and are unfortunately not finished with the first draft of what will be about an 80 page manuscript. Long has also suggested the possibility of a series of monographs for the longer versions of the chapters that appear in the Handbook.

Your general criticisms of the direction in which the manuscript is going will be most appreciated. The current draft is awkwardly worded in many places. We will appreciate any editorial suggestions any colloquium participant may care to make, but do not wish to burden you too much in this regard. Our major concern is to receive your most critical review of the ideas as presented, if they are even understandable in their presently worded form.

WORKSHOP
IN
POLITICAL THEORY &
POLICY ANALYSIS

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Outline

Introduction (Attached)

1. Historical Survey of Political Economy (Attached)

2. Definition of Political Economy (Attached)

3. Usefulness of Political Economy (Attached)

4. An Institutional Approach to Political Economy (Attached)

5. The Individual As the Basic Unit of Analysis (Attached: Incomplete)

6. Purpose For Interaction -- Goods and Services (Attached)

7. Levels of Decision Making (Attached)

8. Institutional Structure Arenas for Interaction

    8.1 Boundary Rules (In Process)
    8.2 Positions
    8.3 Scope and Payoff Rules
    8.4 Procedural Rules
    8.5 Aggregation Rules

9. Results of Human Interaction

Undertaking a synthesis of work in political economy for a Handbook of Political Behavior is a massive task. The potential literature for such a review is far too extensive for the limitations of a single chapter. Moreover, the term "political economy" is used to characterize such a wide variety of academic work that no single chapter could provide a coherent synthesis of all the different perspectives. A chapter-length discussion must be more selective.

This chapter focuses entirely on the political economy literature which starts with the individual as a basic unit of analysis and which conceptualizes collectivities of individuals as artifacts crafted to increase individuals' access to available outcomes. Literature examining the effects of different types of institutional arrangements on the conduct and behavior of individuals and literature evaluating consequences is emphasized.

1. HISTORICAL SURVEY OF POLITICAL ECONOMY

The historical relationship among the social sciences, and particularly between political science and economics, has evidenced a longer period of divergence only partially countered during recent years. Intellectual development of social concerns during the nineteenth century split into the several social science disciplines, as knowledge in each expanded and became more specialized. Scholars in each of the social science disciplines have grown increasingly less aware of developments in the other disciplines.

The divergence is especially clear in political science and economics. Whereas classical political economists wrote both of economic and political matters, successors in economics have concentrated almost exclusively on

economic theories. The classicists' political writing has remained virtually ignored. Economists continued to ignore this work until recently when increasing concerns with nonmarket economic problems and political influences on market activity began to develop within the discipline. Political scientists have similarly ignored, until recently, any relevance of political science concerns with group processes. But an intellectual convergence between political science and economics, albeit small, appears now to be in progress. Writers in both areas have started to draw on each others' insights and analytical methods.

1.1. Convergence Among Classical Political Economists

Political economy is the subject matter analyzed by the classical economists including Adam Smith, Bentham, Malthus, James Mill, Ricardo, and John Stuart Mill. They were aware of the political and social context in which their economic observations occurred, and explicitly considered that context in developing their economic theories. Moreover, the classicists applied their analysis to political and social considerations (Samuels, 1966).

Contrary to popular notions about classical laissez faire economics, the classicists did not see social harmony arising naturally from individual pursuit of self-interest. They argued that such a happy result had to be created (Rosenberg, 1960). Adam Smith recommended that institutional frameworks be

constructed to frustrate the baser impulses of humans and to channel individual decisions in socially desirable directions. Much of Smith's criticism of mercantilism, in fact, dealt with its failure to constrain individual citizen and officials' activity. On a general level Smith argued that economic development would not occur unless individuals, depending on a stable administration of justice, could operate in a political environment that stimulated voluntary cooperation. Stable administration of justice would reduce the risks involved in private exchange. A free political environment would reduce the risks of arbitrary governmental activity. These conditions would establish individual incentives to consider the payoff potential from economic investments necessary for economic growth (Billet, 1975).

Economists in the decades immediately following publication of The Wealth of Nations agreed with Smith's attention to the institutional incentives guiding individuals' economic decisions. Lord Robbins presents this as the market-plus-framework interpretation of classical economics. The classicists according to this interpretation, could imagine a viable market economy developing only within an institutional setting that pointed individual decisions in politically and socially desirable directions. Some of the necessary constraints such as morals, religion, customs, and education could be less consciously imposed than others.* But even nondeliberative institutional constraints could exert powerful influence on individual decision making. Jeremy Bentham, for example, recognized that religion could cause people to in seemingly irrational ways. Religion could prohibit people from working or making a profit, and induce them to pay excessive prices or buy apparently useless trinkets. Nondeliberative forces could be strong enough to cause individuals to act independently of their own wills.

The classicists also argued for deliberately designed institutions to create social order. In a laissez faire economic system these instituionnc

are required to give individuals incentives and power to participate in market arrangements. Moreover, such institutions need to be recreated continually to adjust for shifting economic power and to maintain economic pluralism. Socially desirable institutional structures and consequent economic activity would not develop naturally. Once established, such institutions would deteriorate unless continually maintained via deliberate social policy.

Classical economists, therefore, frequently wrote about both economic and political ideas. Political thinkers of the period, similarly consider ideas on both areas and used economic constructs to develop their political theory. James Madison and Alexander Hamilton in The Federalist Papers and Alexis de Tocqueville in Democracy in America and The Old Regime and the French Revolution are representative (V. Ostrom, 1971). These writers perceived political process as a matter of reconciling individual interests, and often applied an economic methodology when studying incentive structures of political institutions. Madison, Hamilton, and Tocqueville considered these structures to be a deliberate matter of design which could either succeed or fail to create mutual well-being among individuals.

Hamilton, for example, anticipated the individual incentives to be free riders in public goods situations, when he argued for a national rather than state defense system in Federalist Paper #25. He argued that smaller states would rely on larger states for protection resulting in inadequate protection for all. Madison developed a theory of structural incentives when he pressed for specific political institutional designs to channel officials' decisions. He noted that public officials are no different than others in having private interests. Officials would act in their official capacities to further private interests unless constrained by appropriate incentive structures. Madison also advocated that offfcials in different governmental positions confront different incentive structures so that officials would be disencouraged to

act in common for their own private interests. To neglect this when designing political institutions, according to Madison, was to invite institutional failure (V. Ostrom, 1971, 94).

Tocqueville also argued that institutional arrangements were necessary to harmonize individual and group interests. His comparative study of political life in the United States and France concentrated on successes and failures of institutional arrangements to create social harmony. Tocqueville predicted, on the basis of this analytical approach, that wherever institutional incentive structures failed to encourage individuals to seek mutual interests, factionalism and excessive individualism would result.

1.2. Divergence

Specialization and increased formalism in methodology gradually led to a pronounced separation between economic and political thought during the past 100 or so years. Political economy became the intellectual province of nonorthodox writers who employed a sociological methodology.* Analysts searched for broad forces of social change in the macro-institutional tradition of Hegel and Marx. Such forces were considered beyond the influence of individuals and were therefore nondeliberative in the classical economic sense. Thus, individual decision making ceased to be of analytical interest. Analysts sought instead to unravel the logic of these social forces. Political economy adopted an organic view of collectivities such as the state. The macro-institutional or systems approach to analysis developed in the economic writing by Thorstein Veblen, Wesley C. Mitchell, John M. Clark, and more recently by John R. Commons, Gerhard Colm, Clarence Ayres, John K. Galbraith, and Gunnar Myrdal. While these writers continued to press for interdisciplinary analytical methodologies, economic and political orthodoxy went their separate ways.

But the divergence even within orthodox thought was never total. Here and there throughout the late 1800s and the early l900s, orthodox economists stretched their analysis beyond formalized mechanistic decision making models to consider the influence of institutional frameworks. These writers, such as Wicksell, Mazzola, and other European public finance economists, worked with a micro-institutional framework similar to that of the classicists.

Knut Wicksell argued forcefully in 1896 for analytical recognition of institutional incentives for individual decision making, as he developed the benefits principle of taxation (see Knut Wicksell, "A New Principle of Just Taxation"). He opposed the prevailing public finance sacrifice principle supporting use of the revenue system as a device for redistributing income. Such a tax principle, Wicksell argued, would fail as it required some voters and thus official decision makers to vote against their own interests. He concurred with the classical notion that social well-being does not spontaneously result from group processes when he wrote, "They [executive and legislative bodies] are not pure organs of the community with no thought other than to promote the common weal" (Wicksell, 1958, 86).

Wicksell’s analysis anticipates the focus of recent work in political economy by stressing the need to design institutional arrangements to promote common interests among individuals. He recommended a fiscal constitution relating tax burdens to individuals' benefits from public expenditures, thereby limiting officials' ability to allocate burdens and benefits arbitrarily. His concern for institutional constraints in economic matters is clear in the closing statement of his paper where Wicksell writes,

> It is not the business of the science of public finance and of tax legislation to do away with the egotism of the social classes, but to assign it its proper place as a safeguard of legitimate particular interests. This force, to which so much ill will has

been imputed, may then yet produce some good (Wicksell, 1958, 118).

Other orthodox economists, including Hotelling, Keynes, and Bowen addressed political economy within a micro-institutional framework during the period between the world wars.* Hotelling's and Bowen's work applied an economic methodology to political process, while Keynes's developed political influences on economic activity. More to the point of this paper, Keynes's General Theory demonstrated the potential for institutional failure in a market economy.

1.3. Post War Convergence

Interest among orthodox economists in political economy has revived during the past three decades with a virtual explosion of literature applying economic decision-making analysis to group process. Similar developments are occurring in political science and to a lesser degree in the other social sciences. Public Choice, a scholarly journal including contributions from each of these areas, has developed to facilitate communication among this rapidly expanding community of scholars.

Recent applications of economic decision-making frameworks to group decisions has been ably reviewed by Dennis Mueller (1976). Mueller traces the economic modeling of voting in both direct and representative democracies, with analysis of alternative voting rules and theories about the positions of pivotal decision makers. This work appears in the writing by James Buchanan, Gordon Tullock, Duncan Black, Anthony Downs, Kenneth Arrow, and Willian Riker, among others. Much of this work is presented in a rigorous, mathematical framework typical of contemporary work in orthodox economics. Mueller also reviews analyses of other group decision processes including entry-exit decision, and revolution.

Brian Barry's Sociologists, Economists, and Democracy reviews the

political science has become the battleground for the micro- and macro-institutional brands of political economy. Some political theory adopts an equilibrium framework based on methodological individualism as developed in economics. Government and other collectivities are perceived to be in the business of individual want satisfaction. Other political theory, according to Barry, adopts the sociological approach of Talcott Parson with its emphasis on social systems and consequent de-emphasis of individual decision making.

The micro-institutionalist approach to political theory, exemplified in work of Vincent and Elinor Ostrom and their colleagues, differs significantly in focus from the economic approach surveyed by Mueller by conscientiously investigating incentive structures of alternative institutional arrangements more fully than is done in economic literature. The term "institution," but for one or two exceptions, is notably absent from Mueller's survey, although according to a political science perspective that is precisely the substance of public choice analysis or present-day political economy. Mueller's survey does not indicate such an awareness in economics, but he comes close when he says,

> If normative theory studies <u>processes</u> for revealing commonly held values regarding interpersonal utility comparisons, positive public choice studies <u>processes</u> for revealing intrapersonal utility comparisons [emphasis added] (p. 422).

The term "institutions" could be substituted for "processes" in this statement to capture the political science perspective.

If present-day political economy is fundamentally an analysis of the way in which institutions constrain and direct human activity, the incentive structures of institutions should be more explicitly recognized and additional structures included in the analysis. Institutional decision rules such as frequency of

of information among decision makers should be analyzed as well as the voting and entry-exit rules that have attracted economists' attention. A political science focus on the influence of alternative structural arrangements is certainly within the historical perview of political economy, but more important it raises additional public policy issues. With this focus, added attention shifts to the design of institutional structures in which everyday operational decisions are made.

2. DEFINITION OF POLITICAL ECONOMY

Political economy has been variously defined as the application of economic methodology to the analysis of political issues, the application of political organization analysis to economic decisions, and as the study of systematic social change. This brief historical sketch recognizes each of these and suggests yet another but more comprehensive definition. Political economy is the study of incentive structures and their impact on human behavior. The structures can be considered alternatively as social forces deriving from broad historical developments or as organizational mechanisms which are human constructs to create social order. Selection depends on the analyst's understanding of the range for individual decision making, with the second view of structure obviously granting more significance to individual decisions than the first. The authors of this paper adopt the second view.

3. USEFULNESS OF POLITICAL ECONOMY

Our definition of political economy with its focus on incentive structures and their effects on human behavior forces interdisciplinary analysis. The analysis properly draws on all of the social sciences, but especially political science and economics. Political science contributes methods for studying incentive structures, or more broadly, the design and use of organizational arrangements for facilitating human interaction. Economics contributes analysis

But interdisciplinary studies confront resistance. This is clearly manifest in the area of political economy. Political scientists resist the application of economic methodology to the analysis of political issues, and economists resist the application of political science methodology to the analysis of market activities. Scholars and practitioners, highly trained in their own disciplines resist, for good and bad reasons, new or unfamiliar approaches to "their" subject matter. The new mental frameworks are often uncomfortable, the terminology strange, and the analysis, therefore initially more difficult.

People shun the prospects of working to comprehend a novel approach only to discover later that the approach offers no improvement over the familiar. To seek reasonable expectation of payoff for the effort of struggling with novel approaches seems prudent, but unfortunately this reaction is sometimes mixed with a greater portion of fear than reason. Some scholars react to new analytical approaches as though consideration of the new is tantamount to admitting that past study in traditional material has largely been wasted.*

Scholars are also frequently confused or disturbed by assumptions and theoretical constructs employed in other disciplines. In some cases the "foreign" approaches to analysis are considered downright repugnant. Consider, for example, the refusal among many political scientists to work with an assumption that humans are interested strictly in their own well-being. Not only does this assumption force analysis into modes unfamiliar to some scholars trained to emphasize group welfare, but to them the assumption also appears unjust. It calls attention to the baser aspects of human existence. Scholars so persuaded therefore reject the assumption and the methodology that employs the assumption.

Such reaction, where personal values control analysis, might be dismissed as poor use of science, but even scholars striving to minimize the confusion

of value systems and scientific analysis can fall victim to the value conflicts in interdisciplinary study. Values cannot be avoided. They color the selection of problems for analysis and the methodology employed, subsequently causing fundamental tensions for interdisciplinary work. Neoclassical economics, for example, embodies the belief that individuals are the best judges of their own interests. Preservation of the ability to exercise that judgment becomes part of the value underpinnings of much economic analysis. At the same time this value is absent from much of political science. The different value structures underlying different disciplines present significant barriers to the expansion of methodologies beyond traditional boundaries.*

The issue of rigor versus relevance is another barrier. Economics is famous among the social sciences for its methodological rigor and, perhaps, notorious for its abstraction from reality. The two necessarily go together. Discarding variables in the quest for analytical rigor forces abstraction from real world situations. The trade off becomes a sticking point for interdisciplinary scholarship. Many political scientists resist economic methodology because they suspect that the methodology is biased toward discarding certain kinds of variables -- unfortunately variables which are central to political analysis. To these political scientists the rigor gained is not worth the relevance lost. The position more generally raises the fundamental question whether scientific methodologies, developed as they are to address particular arenas of activity, are transferable outside those arenas.

Some political scientists and economists believe that economic methodology is simply inappropriate to the analysis of public sector issues because people respond differently to issues involving groups than to issues affecting only personal well-being. These scholars believe that analysis of human actions in situations involving interdependency among individuals requires an intellectual framework very different from that required to analyze situations involving

Interdisciplinary work, of the sort required in political economy, directs attention to the varieties of scientific methodology, fundamental assumptions, and even to the philosophical underpinnings of competing theoretical approaches. Little productive analysis results from simply transplanting a well developed theoretical construct intact from one discipline to another. Sometimes the transplant works only after major adjustments. Otherwise, the interdisciplinary work begins to look more like an academic invasion than a quest for knowledge and justifies the charge of academic imperialism.*

Resistance to new analytical approaches is to be expected, and advocates of such approaches should be prepared to respond. New jargon should be minimized and patience exercised in arguing from new assumptions. Advocates need especially to be willing to consider the logical foundations of their analysis to assess the reasonableness of applications to new areas of analysis. But even with careful and clear development, differences among scholars about the value of new theoretical approaches will remain. To reduce the differences, analysis is driven ultimately to test the empirical application of the approach to the real world.**

Examples of empirical tests are provided by Milovan Djilas (1957; 1969) and Tocqueville (1945; 1955). Djilas describes policies and conditions in the Communist regime of Yugoslavia as a real world test of the application of Lenin's political theory. Tocqueville develops the theoretical structures underlying the American and French political systems and uses the performance of those systems as an empirical test of alternative political theories. These examples are mentioned to show that testing need not involve statistical analysis, but can be conducted in the context of comparative political and economic systems.

But statistical testing is appropriate. Brian Barry (1978), Pommerehne and Schneider (1978), Frey and Pommerehne (1978), and Frey and Schneider (1975) are good examples of tests based on statistical investigations of specific

political economic constructions. Barry develops a very useful critique of Downs's Economic Theory of Democracy and of Parson's writings in sociological theory via this method. Frey, Pommerehne, and Schneider provide an enlightening series of tests of relationships between political and economic activities and specifically about the role of institutional structure in economic decision making.

Such tests do not provide conclusive evidence on the validity of various political economic theories, of course, but a base is laid for the accumulation of knowledge about the relevance of these theories. The accumulation of knowledge comes with additional testing. The point here is simply that this sort of evaluation is required for progress in scientific investigation. Scientific debate has to grow beyond arguments about the reasonableness of assumptions, discussions of value conflicts in theoretical approaches, and concerns about biases in rigorous methodology. The following development of a political economic framework, therefore, directs attention to the empirical literature that has grown up around various aspects of the political economic framework.

4. AN INSTITUTIONAL APPROACH TO POLITICAL ECONOMY

The framework we will use to organize our discussion of the theoretical and empirical work in the micro-institutional approach to political economy is composed of four basic elements: (1) the nature of the used individual as the initial unit of analysis, (2) the nature of goods and bads produced by actors, (3) the structure of decision-making arrangements used by actors to produce goods and bads, and (4) the criteria used to evaluate the results of human conduct within institutional settings.

As we discuss each of the elements, we will attempt to discuss first the general meanings given to each term. We will then examine, where relevant,

divergent definitions and their implications. We will then proceed to examine the empirical literature related to each of these elements and to discuss the implications of empirical findings for each of the elements in the framework and for the framework as a whole.

5. THE INDIVIDUAL AS THE BASIC UNIT OF ANALYSIS

5.1. Methodological Individualism

The core methodological assumption underlying all of the literature included within the frame of reference for this chapter is that the individual is the basic unit of analysis in the social sciences. This methodological position is held by scholars who make extremely different assumptions about the nature of the individuals who are interested in explaining behavior at many different levels of analysis including entire economies or polities. This methodological position involves two closely related beliefs about scientific discourse. The first belief relates to the nature of proper definitions given to terms used in scientific discourse. The second belief relates to the nature of proper explanations given for social behavior (Brodbeck, 1958). Each of these will be discussed below.

5.1.1. Definitions

Since the individual is considered as the basic unit of analysis, methodological individualists are concerned that terms which refer to groups are defined properly. Methodological individualists assert that all terms which define group characteristics can in principle be defined in terms of attributes of individuals, relationships among individuals, or both. Scientific terms referring to group characteristics should thus be built up from scientific terms which refer either to single individuals, relationships among individuals, or a combination of both. Some critics of the position have mistakenly charged that methodological individuals deny the scientific status of all terms which refer to groups and which cannot be used to refer to individuals. This is a false charge. Examples of such terms include group homogeneity, efficiency, solidarity, and cleavage. One cannot refer to a single individual as having the attribute of group homogeneity. However, terms referring to groups, such as group homogeneity, can be built up from scientific terms which refer to relationships among individuals. Homogeneity can be defined in terms of the distribution

of specific characteristics among the individuals in a group. Such terms are thus properly within scientific discourse. Common properties of groups, including physical resources, languages, and rule systems can also be defined as relational properties among the individuals comprising a group.*

If one were not to define group attributes in terms of the behavior of its constituent individuals, then one would have to believe that there was something else other than the individuals in the group which exhibits a group characteristic. The proponents of metaphysical holism do maintain that there are group attributes which can not be defined in terms of the individuals within or relationships among these individuals. Such group characteristics are thought to be emergent from the properties of the parts. Superentities are seen as having characteristics of their own including group minds, group wills, group purposes that are over and above the properties of constituent members or the relationships among them. The arguments of methodological individualists against metaphysical holists have at times been misunderstood to include a complete denial of the scientific status of all terms referring to groups which cannot be used to refer to individuals. Methodological individualists deny scientific status only to aggregate terms such as "group mind," because such terms cannot be defined according to relationships among individuals. Methodological individualists do not deny scientific status to group terms, such as homogeneity, which can be defined in terms of relationships among constituent individuals.

Methodological individuals are even willing to grant the usefulness of broad and amorphous terms such as "The Reformation," "Capitalism,'" and "the Church," which are usually not carefully defined in terms of individual attributes, relationships among individuals or both. Such terms loosely encompass an indefinite set of behaviors and the list of these behaviors cannot be sharply terminated. The methodological individualists argue that all such concepts are in principle Definable in terms of individual behavior even though in practice this may be Difficult to do. Such indefinite terms while poorly defined do convey sufficient

meaning for useful discourse. In discussing the usefulness of such ambiguously defined terms, May Brodbeck argues:

> The course of science is not always as smooth as the logical analyst would like. And it seems to me that there are cases in which the best we can do is point out the distinctions and the difficulties. The most that we can ask of the social scientist whose subject-matter requires him to use such "open" concepts is that he keep the principle of methodological individualism firmly in mind as a devoutly to be wished-for consummation, an ideal to be approximated as closely as possible. This should at least help assure that nevermore will he dally with suspect group-minds and impersonal "forces," economic..-or otherwise; nevermore will nonobservable properties be attributed to equally nonobservable group entities. At the same time, he will not by methodological fiat be struck dumb about matters on which there is, no matter how imprecisely, a great deal to be said (Brodbeck, 1958: 6).

5.1.2. Explanations

The second component of the methodological position is that explanations of group behavior can all in principle be decomposed into a set of elemental assumptions about the nature of the individual plus a set of composition rules. Again, the view needs to be contrasted with a holistic position. A holist would argue that macroscopic laws of social behavior do exist which cannot be reduced below the macroscopic level at which they are posited.

The methodological individualists, on the other hand, views individuals as the primary actors. Thus all speculations about social processes should be reducible to one set focusing on the decision-making processes of the individual and a second set focusing on the way individual behavior is aggregated into differing levels of group behavior under defined conditions. Both sets of theoretical speculations may, at time, be very complex, partiucularly

the second set-the composition rules. At any particular point in scientific development, we may have relatively reliable information about regularities in behavior at a macro-level which we can not yet explain by reference to specific behavior of individuals aggregated in a particular way.

Methodological individualists may thus be pragmatic holists when scientific progress at the macro level has advanced further than at the micro level (Simon, 1962: 468; Brodbeck, 1958: 19; Watkins, 1955: 187-189). Given that posited relationships among attributes of groups will always be simpler than a theory involving all relevant elemental assumptions and compositional rules, we can expect that theories developed at the macro level will be easier to understand. In consequence, considerable social scientific effort will be devoted at this level. We should expect to find empirically warranted, macro-level theories which have not been successfully decomposed into elemental assumptions and compositional laws. The existence of useful and empirically warranted macro-level theories of behavior is not a threat to the epistemological position of methodological individualism. However, the existence of such macro theories is seen as a consistent challenge for the development of new micro theory which can provide a better explanation of behavior at the group level (Leibenstein, 1979).

Methodological individualists thus assume that all scientific statements about the relationships among group characteristics can in principle be reduced to a complex set of elemental assumptions about the nature of the individual and a series of composition rules. The compositional rules of this approach usually involve statements about the physical or social environments in which individuals are operating (the nature of goods and bads involved) and statements about the consequences of using different decision rules for making group decisions (the nature of decision-making arrangements). Many different propositions about the nature of the individual are used within this approach. All of these contain explicit or implicit propositions about individuals as information

processors, individuals as valuers, and individuals as .calculating selectors of future actions.

5.2. Elemental Assumptions, Composition Rules, and Rationality

While methodological individualists agree that explanations of social behavior involve a set of elemental assumptions about the nature of the individual and particular sets of composition rules analytically defined to describe varying types of posited social situations, no genuine agreement exists concerning which elemental assumptions should be used. Almost all political economists who attempt to explain social behavior in differently structured institutional arrangements assume individuals are rational. Rational action is broadly conceived of as choosing appropriate means to attain an individuals ends. However, no single technical definition of rationality is satisfactory to all scholars addressing these questions. Any particular concept of rational action involves some conception of the ends or outcomes of choice, how individuals positively or negatively value those ends, what means are available to an individual or achieving these ends, and the degree of certainty that specific means will lead to specific ends.

Historically, the neoclassical concept of economic rationality developed as a series of specific assumptions about the information, valuation, and calculation processes of buyers and sellers operating in a perfectly competitive market. The composition laws of the market -- large numbers of buyers and sellers, free and rapid entry and exit, and homogeneous, divisible or excludable goods -- produced a particular type of decision situation for the individual buyer or seller. Neo-classical economic rationality involving profit maximization in a certain world was defined in terms relevant to that decision situation. The modern, but closely related concept of rationality known as optimal decision-making also evolved in conjunction with a specific set of composition laws. In this case the composition laws were those of game theory. In a formal game, an individual is confronted with the necessity of

choosing from a finite and already defined set of alternative strategies that lead to a set of known outcomes to which objective payoffs have been attached. Awareness of the intimate relationship between the decision-making structure creating a particular type of decision situation and the set of elemental>y assumptions about the individual use4 in a particular technical definition of rationality has almost vanished. Rationality is today frequently defined in terms of an abstract decision situation. This abstract decision situation, described below, is not itself seen as resulting from any particular type of decision-making arrangement like a market or a legislature. A particular technical definition of rationality can be found in explanations offered for group behavior in such differently structured arrangement arenas as markets, legislatures, and the firm. We may better understand the vigorous arguments among political economists about the appropriate definition of rationality if the close chicken-and-egg relationship between composition laws (decision structures and goods) and elemental assumptions (rationality) is understood. Further, any micro-institutional theory including reference to more than one type of decision-structure, will need to examine the effects of different decision structures and goods on the type of decision situations faced by individuals and the consequent assumptions that can be made about rational action.

5.3. An Abstract Decision Situation

Since modern technical definitions of rationality are all related to an abstract concept of a decision situation taken out of context of a particular decision structure, let us first turn to a description of this situation. Decision situations are defined to involve strategies, outcomes, valuation of outcomes, and states of affairs. A <u>strategy</u> is defined as an instrumental action (or set of actions) taken by an individual in an attempt to achieve an outcome. Strategies may involve simple acts, such as hammering a nail, or a complex plan of future actions, such as those involved in building an entire house. An <u>outcome</u>

is one possible result of the strategy. for a strategy to be differentiated from another strategy, at least one of the outcomes potentially resulting from the choice of the two strategies must differ. An outcome is a discrete event such as winning or losing a game, completing the construction of a house, passing a bill, etc. The valuation placed by individuals on outcomes is analytically separate from, the outcome itself. Two individuals who received the same outcome, say winning a game of tennis, may value the outcome differently. Outcomes may also be valued either positively or negatively. Positively valued outcomes which enter into exchange transactions are usually thought of as goods and such negatively valued outcomes as bads or discommodities. The analytical distinctions between the outcome and the value assigned the outcome is blurred in game theory when a payoff is presented as the outcome. However, a supplemental assumption must be made in game theory that the individual's preference for the outcome is identical to the payoff assigned to the outcome.

Individuals may also attach positive or negative valuation to actions. Where acts are always considered as costly, the analytical distinction between the value of the action and the value of the outcome is collapsed. In this case, the value of the outcome is considered to be a net valuation taking into account positive and negative valuation of the outcome and of actions. However, some scholars (see, in particular Riker and Ordeshook, 1973) overtly separate the positive and negative valuation placed on an outcome.

The state of affairs is an abstract way of defining how much control the individual has over the result of an action. In a certain world only one state of affairs is posited. By choosing a particular strategy the individual always obtains the result. The distinction between action and result is frequently dropped when only a single state of nature is posited (Arrow, 19). Multiple states of affairs imply either that other individuals also control variables which affect the outcomes such as in a game or that "nature" may

An abstract decision situation is thus one in which an individual is faced with a need to select between different actions which lead to a different outcome set. The minimal choice situation can be diagrammed in the following manner:

States of Affairs

State 1

Strategies	A_1	Outcome 1
	A_2	Outcome 2

Usual choice situations, however, involve more strategies, states, and outcomes than the minimal set.

Decision situations are usually defined alternatively to be certain, risky, or uncertain. While these terms are frequently used to describe the level of information an individual decision-maker has about a decision situation, the terms originally evolved to describe the structure of the situation rather than the cognition of the individual (Buchanan and di Pierro, 1978). Clarity of analysis is enhanced by separating our notions of: (1) the type of world in which an individual is making choices and (2) the level of information that the individual has about that world.

The first is an attribute of the decision situation. We will classify the decision situation itself as being alternatively certain, risky, or uncertain. The second is an attribute of the individual and has to do with how much accurate information the individual has about the decision situation. The level of information available to the individual may be thought of as complete (also, referred to as full or perfect) or incomplete. The level of information available to an individual is normally one of the elemental assumptions of a rationality postulate. When the careful distinction between the attributes of the decision situation itself and the knowledge that an individual has of that

uncertain about the result of an action because of ignorance of a certain world or because the individual has complete information about an uncertain world? Let us now define certainty, risk, and uncertainty as they relate to a decision Situation.

A certain decision situation is one in which there is only one state of affairs or nature. Given a single state of nature, each alternative leads to one and only one outcome. The competitive market, for example, is viewed as creating a certain world for seller and buyer decision making. Since neither sellers nor buyers in a competitive market have any control over price the price at which alternative quantities of a product can be bought and sold, is determinate and thus certain in the short run.

Both risky and uncertain decision situations are characterized by more than a single state of affairs or nature. Actions no longer lead invariably to single outcomes. In a world characterized by risk, the probabalistic relationships between each strategy and set of outcomes can be known (Knight, 1921). A classic situation of this type is the urn filled with a known number of red and black balls in which the individual decision maker is asked to predict in advance of a draw whether the next ball to be selected will be red or black. Insurance firms are thought to face a world characterized by risk when they calculate premiums to be charged for different types of insurance policies. Once data about the distribution of past events is available, probabilities can be assigned to different distributions of future events. The minimal choice situation under risk can be diagrammed in the following manner

		States of Affairs		
		S_1	S_2	
Strategies	A_1	$Outcome_{11}$	$Outcome_{12}$	$P(S_1)=x$
	A_2	$Outcome_{12}$	$Outcome_{22}$	$P(S_2)=1-x$

Uncertainty characterizes the decision situation when the probabilities of different actions leading to different outcomes are unknowable. The set of alternatives and outcomes is still assumed to be finite and knowable in an uncertain decision situation but the likelihood of an outcome resulting from a particular strategy is not known, Awhile most games against '"ature" can be conceptualized as involving risk, most N-person games :are examples of decision situations in which uncertainty prevails. The diagram for a minimal choice situation under uncertainty is the same as that under risk except that no probabilities can be presented for the likely occurrence of the different states of affairs.

When the distinction is made, then, between the type of world in which the individual is making choices and the cognition of the individual about the world, a statement is possible combining the completeness of information and the certainty of the decision situation. A certain world may exist, for example, in combination with incomplete information. There is a single state of affairs and a knowable set of strategies linked to a knowable set of outcomes. The linkages are also knowable. But the decision maker may be incompletely informed about the situation. He may not be aware of entire sets of available strategies, or the entire set of outcomes, or he may not know how all of the outcomes and strategies are linked.

Other combinations, of course, are also possible. The decision situation may be uncertain, but the decision maker may be completely informed. The decision maker in this case knows all that can be known; the difficulty now lies in the decision situation

5.4. Rationality and the Animation of Political-Economic Models

In this section we review some major definitions of rationality used by political economists. As we have argued above, explanations of social behavior made by methodological individualists are based on models containing both

elemental assumptions and rules of composition. The basic working parts or elements of a model of political or economic processes are contained in the composition rules regarding the nature of the goods and the structure of decision-making arrangements. Thus, the working parts of the competitive market model involve the specifications of: (1) the attributes of the goods (highly divisible, homogeneous, low exclusion costs,; highly subtractible, etc.) an (2) the attributes of the decision structure (low entry and exist costs, large numbers of buyers and sellers, conformance to honest and legal behavior, etc.). A complete (but simplified) description of a competitive market includes reference only to the composition laws derived from the attributes of goods and the structure of decision-making arrangements (see Bain, 1959: Chapter 4). But, when a theorist wishes to "animate" this model in order to examine "the way in which various elements of the model act upon each other . . ." (Popper, 1967: 3), a specification is needed of how individual actors making choices in decision situations produced by the composition laws will act. Definitions of rationality are such specifications. Thus, hypotheses about equilibrium conditions of a competitive market depend both on the rules of composition concerning goods and structure and on the neo-classical definition of economic rationality.

To make an analogy to the physical sciences, a model of the solar system could be built with appropriately sized balls for each of the planets and their moons placed on circulating rods at the proportionate distance away from a "sun' and at the appropriately inclined planes. This model would use the composition laws of astronomy to create a simplified version of the "situation" of the solar system. Animation of the model results by the application of Newton's laws of motion. The explanation for the movement of various planets around the sun is thus contained in the logical structure of the composition laws of astronomy in conjunction with the elemental laws of motion. Any particular even in the solar system is explained when a statement

about its likely occurrence is deduced from this composite theoretical structure.

Similarly, any explanation of the movement of prices or of the amount of product exchanged in a competitive market is dependent both on the composition rules and the neo-classical definition of rationality. It is this key reliance of all explanations used by micro-institutionalists on a definition of rationality (as well as a set of composition rules) that has made the definition so important.

Considerable effort has been expended to arrive at a single definition of rationality that could be used to animate all political economist models much as Newton's laws of motion are used as animating principles across a wide variety of different physical models. This effort to arrive at a single definition may have been misdirected. Instead of developing one and only one definition of rationality to animate all models of political and economic processes, we may need to develop several alternative definitions of rationality. One definition of rationality may produce good explanations of behavior in conjunction with another set. In order to explore this question we will examine several of the major definitions of rationality and how they are related to a particular type of decision making structure. All definitions of rationality involve elemental assumptions about: (1) the level of information that a decision maker has about the decision situation (cognition), (2) the types of preference orderings the individual makes on outcomes, and (3) the types of calculation processes assumed in order for the decision-maker to make a determinate choice. We will examine which specific assumptions about cognition, valuation, and calculation are made in several important definitions of rationality.

5.4.1. Neo Classical Definition of Economic Rationality.

The neo-classical definition of economic rationality evolved in conjunction With the composition rules of a perfectly competitive market and pure private

goods. These composition laws produce decision situations in which the number of alternative actions that can be taken are limited (buy or sell goods); the outcomes are knowable in advance (total revenue = price times the quantity sold) and are certain (in the short run only one price will prevail and no action by either buyers or sellers will affect it). The cognitive assumption of this definition is that all participants will have complete information about the certain world. This means that each individual in a market will know all there is to know about the decisions that need to be made. Given the structure of the situation, the relevant information that is needed is the current price of the relevant commodities. In this context, complete information is a fairly realistic assumption. The preference assumption is that all participants place positive values on all outcomes which could be reached. This complete valuation is ordered in at least a consistent and ordinal fashion.

The calculation assumption involves specifying that each participant will chose that strategy which maximizes his benefits from an exchange. Given that only one outcome can be attained from any action taken, maximization does not require cardinal valuation. To maximize in this decision situation means selecting that option which leads to the highest value even though one may not know how much higher that value is when compared to the next best alternative. For the entrepreneur one could simply postulate profit maximization. It is reasonable to assume that utility is monotonically related to profits up to a linear transformation. For the consumer, all that is necessary for a maximization assumption is that the marginal rate of substitution of one good for another can be computed. To assume that individuals would always be able to know, for any given distribution of commodities to them, how much value another loaf of bread as compared to another pound of butter is again not such an extreme assumption. Individual consumers are seen in markets making

Still in Draft

Remainder of section will discuss rationality as optimal decision making in game theory, Simon's concept of rationality, Williamson's concept of rationality, Leibenstein's concept of rationality, and V. Ostrom's concept of rationality and then try to provide a synthesis.

6. PURPOSE FOR INTERACTION - GOODS ANID SERVICES

Human beings do not generally live in isolation but interact for many reasons. Political economy concentrates on those interactions which attempt to increase the availability of goods and services. Interaction permits specialization in production, exchange of surpluses, and scale economies. Interaction opens the possibilities for collective consumption and financing arrangements. Despite scattered romantic notions of self sufficiency, interaction is a fundamental condition of human existence. Robinson Crusoe lives only in the imagination of the storyteller.

This section of the paper develops the relationship between the arrangements for interaction and the nature of goods and services. Interaction occurs through private, voluntary arrangements and through a variety of collective arrangements - some involving coercion. Goods and services are similarly varied -- ranging from private to collective goods, including externalities and pure public goods.

6.1. Distinguishing Characteristics of Goods

The variety in goods is too great to catalog here, but most elements of variety such as color, weight, size are of little consequence to arrangements for human interaction. Vastly dissimilar goods can be made available through similar institutional arrangements. The present discussion emphasizes those characteristics of goods that relate to alternative institutional arrangements for making goods available.

Such inquiry has grown increasingly popular in modern economic analysis during the past 35 to 40 years, probably beginning with Howard Bowen's (1943-44) article on the political process as a means to allocate resources. He distinguished between goods that are consumed simultaneously by more than

one individual (joint consumption) and goods that are consumed by a single individual (separable consumption). Individual consumption of the first type of good does not reduce the availability of those goods to other individuals, while consumption of the second type of goods does. Paul Samuelson repeated this distinction in the mid-1950s in a now-classic series of articles on pure public goods (1934 and 1953). The distinction between public and private goods has since become ingrained in economic analysis.

Economic analysis has traditionally dealt with the function voluntary Market arrangements for allocating resources and distributing incomes. Therefore economists have concentrated on the implications of the-public-private goods distinction for the market system and have concluded -that markets fail where public goods are concerned even under conditions of perfect competition. Failure in this context does not necessarily mean zero allocation for all public goods, but only that market allocations will not maximize welfare. Zero production, though, may result in some cases.

The analysis, in its simplest form, proceeds from the joint consumption nature of a public good to show that welfare is maximized where the sum of all consumers' marginal rates of substitution (i.e., valuations of marginal consumption units) equals the social marginal cost of producing the good. A market fails to achieve this condition, because of the infeasibility of developing a distribution of prices for the public good among consumers corresponding to the variety in consumer marginal valuations for the public good. Markets generally require the same price from all consumers.

This problem does not develop in a market for private goods, because each consumer can independently purchase more or less of the good at the market price depending on the strength of the consumer's preferences for the good. By allocating private goods through exchange toward consumers with

the law of diminishing marginal utility, to equal the marginal valuations of other consumers. This process occurs in the market place, as all consumers pay the same price for the private good. Furthermore, competition among producers assures that this price equals the social marginal cost of producing the good.

Writers during the past two decades have extended the analysis of public goods by adding other characteristics that distinguish public from private goods. Instead of emphasizing as Samuelson did, that public goods are those in which consumers jointly enjoy the same unit(s), Musgrave (1959) Head (1962), and Olson (1965) have emphasized the possibilities for excluding individuals from consuming goods. A public good, using this distinction, is one where exclusion is infeasible once the good is available to any consumer; whereas a private good can be withheld from one individual while another individual enjoys the good.*

The market system fails, with respect to public goods according to this distinction, because infeasible exclusion entails difficulty in appropriating payment from users. Individuals thus have the incentive to consumer public goods without paying for them resulting in market failure to cover the cost of production at efficient levels of resource allocation. As in the joint consumption case, conditions may or may not result in zero allocation to public goods in the market place.**

An ever-growing and confusing list of characteristics for goods has recently developed with the explosion of interest in the characteristics of goods and their facility for exchange through market arrangements. Special concerns of particular authors continues to generate new characteristics. We have listed some of the many characteristics found in the political economy literature in column A of Figure 1.

Figure 1

Characteristics Distinguishing Private and Collective Goods

A	B
Jointness Joint Supply Joint Consumption Joint Consumption Rivalness Subtractibility Consumptiveness Divisibility	Degree of Subtractibility
Exclusiveness Excludability Potential for Exclusion Appropriability	Feasibility of Exclusion
Group Scope Degree of Choice	Degree of Subtractibility and/or Feasibility of Exclusion
Measurability Packagability	Measurability

The list has become increasingly difficult to use as a mode for analysis. If possible, the list needs to be reduced to only essential distinguishing characteristics, as has been attempted by Hart and Cowhey (1977) and Ostrom and Ostrom (1978). Hart and Cowhey argue that two seemingly different characteristics leading to identical implications for institutional arrangements for making the goods available can be treated as identical for analytical purposes. They examine a variety of characteristics including joint supply, nonexcludability, indivisibility of benefits, aid impossibility of appropriation from this perspective. Their conclusion, though not entirely persuasive, is that these four characteristics are distinct from each other. Ostrom and Ostrom identify two defining characteristics: the degree of jointness and feasibility of exclusion. The nature of a good depends on its mix of these characteristics as illustrated in Figure 2.* The framework produces four categories of good, (1) private goods, (2) toll goods, (3) common pool goods, and (4) public goods. The last three contain some aspect of publicness and are henceforth called collective goods to avoid confusion with the special case of public goods.

Column B in Figure 1 is another attempt to reduce the variety of expression concerning the characteristics of collective goods. The grouped terms in column A are considered interchangeable and expressed by the single corresponding term in column B. The degree of subtractibility refers to the aspect of jointness developed in the work by Bowen, Samuelson, and others. Subtractibility draws attention to the effect that one person's consumption has on the availability of the good to another, i.e., whether one perstn8s consumption subtracts from another's. Although usually discussed in either zero or one-for-one terms, subtractibility is actually a matter of detree, where one person's consumption of a unit reduces the availability to another

Figure 2

Types of Goods

Jointness of Use or Consumption

EXCLUSION	Alternative Use	Joint Use
Feasible	Private Goods	Toll Goods
Infeasible	Common Pool Goods	Public Goods

consumer by less than a unit. This feature may result from the durable nature of the good and/or the requirement that a consumer be in a particular space and time to use the good.*

Feasibility of exclusion identifies the potential for barring individuals from using the good. As this ordinarily arises in connection with the possibilities for requiring payment from consumers commensurate with their valuations of the good, the ability to appropriate payment from consumers is considered to be interchangeable with the feasibility of exclusion.** If an individual can easily be excluded from use of a good, that individual can be forced to pay before consuming the good. The distinction is probably made in collective goods literature, because requiring payment before consumption is not always feasible, although eventual collection of payment might be.

Ronald Coase's (1974) brief history of financing British light houses illustrates this point. Given the physical nature of the use of a lighthouse, many writers are tempted to conclude that is represents a collective good, because excluding ships from using it is exceedingly difficult. Coase shows, however, that users can be forced to pay while ships are in port. Excluding ships from use of a lighthouse until they have paid for the service would be very difficult but extracting payment later is not.

The terms group-scope, and degree of choice embody elements of both subtractibility and exclusion and are, therefore, not identified in Figure 1 as distinct from each other in the private-collective goods classification. The literature sometimes refers to group-scope as the domain of a good or the total number of users the good can serve before the degree of subtractibility becomes noticeable. But group-scope may also refer to the minimum number of people or size of geographic area before exclusion becomes feasible.

The degree of choice, i.e., the ability of an individual to choose whether to consume a good once it is available, also appears to arise in the context of subtractibility and exclusion. An individual choosing not to consume a collective good needs to avoid the time-space requirements of the good. If this is easily done, the requirements must be quite restrictive that is, the good is provided in a well-defined, relatively confined geographic area and possibly at a particular time. Such restrictions suggest a noticeable degree of subtractibility in the good, as one individual's presence in that time-space reduces the possibility for another individual's presence. Or the restrictions suggest that the feasibility of excluding individuals from the consumption or at least appropriating payment may be fairly high.

Measurability is another key characteristic in the private-collective classification.* When individuals have difficulty measuring the impact of a service on themselves, they have difficulty using voluntary market arrangements to procure the service. They cannot determine whether they are buying too little or too much of the service. The tendency is to finance such goods through collective arrangements, where the costs can be distributed to other individuals thereby reducing the likelihood (from a private perspective) of buying too much of the good. The good, thus, becomes institutionally defined as a collective good. The difficulty of measurement is also more likely to arise in collective than private goods because low subtractibility and low feasibility of exclusion are more apt to arise in services than in tangible goods, and measurement problems are also more apt to arise in the case of services.

The divisibility characteristic is frequently confused in the literature on collective goods and, therefore, merits additional comments. Economists,

within the relevant domain consume equal quantities of the good. The good is not divided among the consumers. Thus total consumption of the collective good x by n consumers is represented as

$$x = x_1 = x_2 = x_n$$

Whereas, a private good is divided among consumers, with total consumption represented as

$$x = x_1 + x_2 + x_n$$

some scholars have incorrectly interpreted this to mean that the benefits from the good are also indivisible.* Benefits to one consumer are falsely- a assumed to equal the benefits to another.

Equal consumption, in fact, does not mean equal benefits. Two individuals can use the same units of a good while realizing different amounts of benefit, for benefits depend on the consumers' individual tastes and preferences.

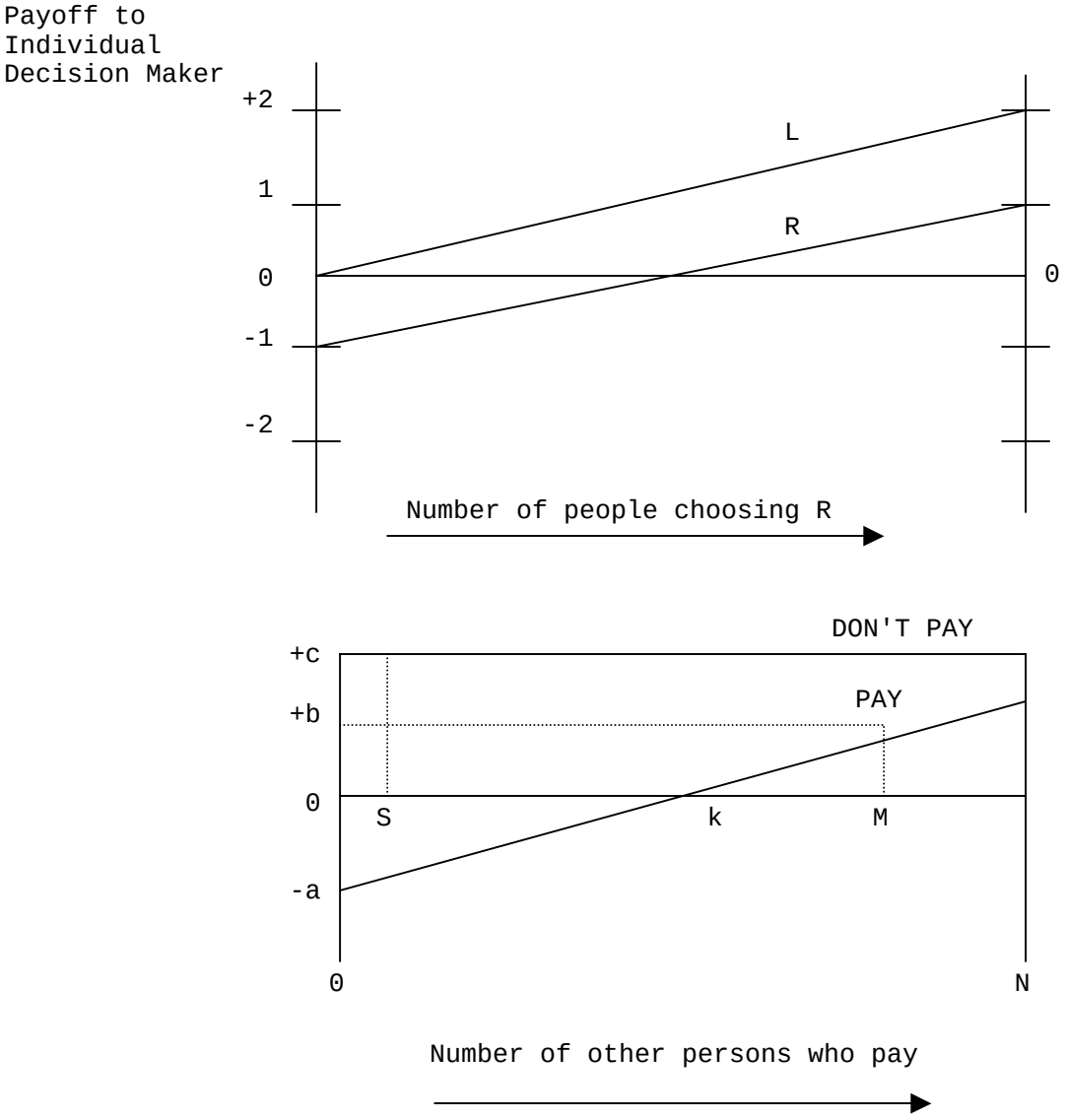
6.2. Types of Goods and Corresponding Institutional Arrangements

The relationship between the nature of goods and institutional arrangements for making the goods available is the subject of a rapidly growing body of literature. While early attention by economists turned to the phenomenon of market failure, more recent attention beginning with Mancur Olson's Logic of Collective Action, has dealt with alternative institutional arrangements for handling collective goods. Much of this literature including Chamberlin (1974), Frolich, Hunt, Oppenheimer, and Wagner (1975), and Rogowski and Wasserspring (1971) has developed as a critique or extension of Olson's work. Thomas Schelling (1973) combined the characteristics of goods with simple game theoretic analysis to produce a variety of implications for the types of goods and institutional arrangements for making goods available. His approach highlights the role of information to decision makers, the frequency of decisions, and the determination of payoffs, and thus fits neatly into the institutional framework of this paper.

Schelling constructs his framework by postulating a decision structure in which a decision maker is confronted with a binary choice of selecting either left (L) or right (R) The payoffs to the decision maker, of either choice depend on the choices made by other decision makers in the group. Initially Schelling draws the payoff curves, as shown in Figure 3, to indicate that left (L) is a dominant choice, i.e., left is preferred to right regardless of what others choose. Thus, the L curve lies above the R curve at all points along the horizontal axis on which the number of people in the group choosing R-is arrayed. But at the same time the individual has a dominant preference regarding selections by other persons, and this is illustrated by the slope of the curves. A positive slope indicates a positive relationship between the payoff to the decision maker and the number of people selecting R. Figure 3 shows this pattern irrespective of the choice by the decision maker represented by the diagram. If everyone, including the decision maker chooses L, the relevant point is at the extreme left part of the figure. Figure 3 shows that the payoff to the decision maker in this case is zero. Whereas, if the decision maker selects R when everyone else selects L the payoff to the decision maker, is -1. Alternatively, if everyone including the decision maker selects R, the relevant point is at the extreme right part of the figure, where the payoff on the R curve is +1. If <u>only</u> the decision maker selects L the payoff is +2. The diagram shows that the payoff to the individual decision maker is always greater from L than from R, whatever the selections by the rest of the group, but the payoffs from both L and R increase as a greater number in the group select R.

To simplify the analysis of collective decision making Schelling assumes initially that the same payoff pattern applies to each individual in the group. He also assumes that each individual knows the choices made by others

Figure 3


Payoff to
Individual
Decision Maker
+2
1
0
-1
-2
L
R
0
Number of people choosing R
DON'T PAY
PAY
+c
+b
0
-a
S
k
M
0
N
Number of other persons who pay

assumptions are retained in the analysis below. A more complete analysis can be developed by altering these assumptions and tracing out the implications.

The present purpose is to apply Schelling's framework to the interaction of individuals when goods with varying characteristics are involved. The decision confronting each individual, in this case, is a binary choice of whether to reveal his valuation of the good by offering to pay the supply price. The choices are pay and don't pay, and the payoffs to each choice are the net benefits from consuming the good in question. The price that the individual is deciding whether to pay is assumed in every case to equal the supply cost equally shared by the total number of contributors. The horizontal axis measures the number of other individuals who decide to pay the supply price. The analysis that follows applies this framework to each of the four types of goods identified in Figure 2 - public goods, common pool goods, toll goods, and private goods.

6.2.1. Public Good

Assume that a supplier offers a fixed quantity X of a completely nonsubtractible good where exclusion is infeasible at a total price equal to marginal and average cost. Assume also that individual valuations of the good are insufficient to cover the supply price, i.e., individual demand curves lie below the supply curve. This gives the pay curve drawn in Figure 4, if the group is large enough eventually to reduce individual shares of the cost below individual valuations. One individual choosing to pay the supply price, while all others choose not to, yields a net loss to the individual payer equal to the excess total costs over his total benefits. This situation is illustrated at the extreme left on the figure, and the loss (negative benefits) is measured by the vertical distance Oa. As other individuals decide to pay, the losses per contributor decline until at point k the per

person costs for X equal each person's benefits. Additional persons to the right of point k choosing to pay results in net gains to all contributors. If OM people pay, each contributor realizes a net benefit equal to Ob. The constant slope of the PAY curve indicates that all individuals share equally in the supply price.

The is choice not to pay the supply price, on the other hand, yields a zero payoff if everyone makes that decision. The individual sacrifices no payment but also realizes no benefits, and the net result is zero. But if any else in the group pays, the benefits to the individual choosing not to pay rise immediately to equal the full benefit of the good. The good is nonsubtractible and nonexclusionary and is, therefore, freely available to all when it's available to any one person in the group. If S represents a single individual paying for the good, the payoff to the decision maker for not contributing is Oc, .and the payoff continues at this level regardless of the number of other individuals who contribute. (Remember that X is assumed to be fixed.) Thus, the DON'T PAY curve has a zero slope.

The DON'T PAY curve lies above the PAY curve throughout indicating the advantage of realizing full benefits from the good while paying zero costs. Even at the extreme right of the figure where the individual cost shares are minimized, the payoff to not contributing exceeds the payoff to contributing, because the benefits from X can be realized for free. The vertical difference between DON'T PAY and PAY, thus, measures the individual's share of the price for the good.

The difficulties of relying on voluntary institutional arrangements for making a public good available on the basis of private contributions have been thoroughly discussed in the literature. Figure 4 summarizes that discussion. Individuals have clear incentives to decide against paying for the good, i.e., to be free riders, regardless of what everyone else does, although the

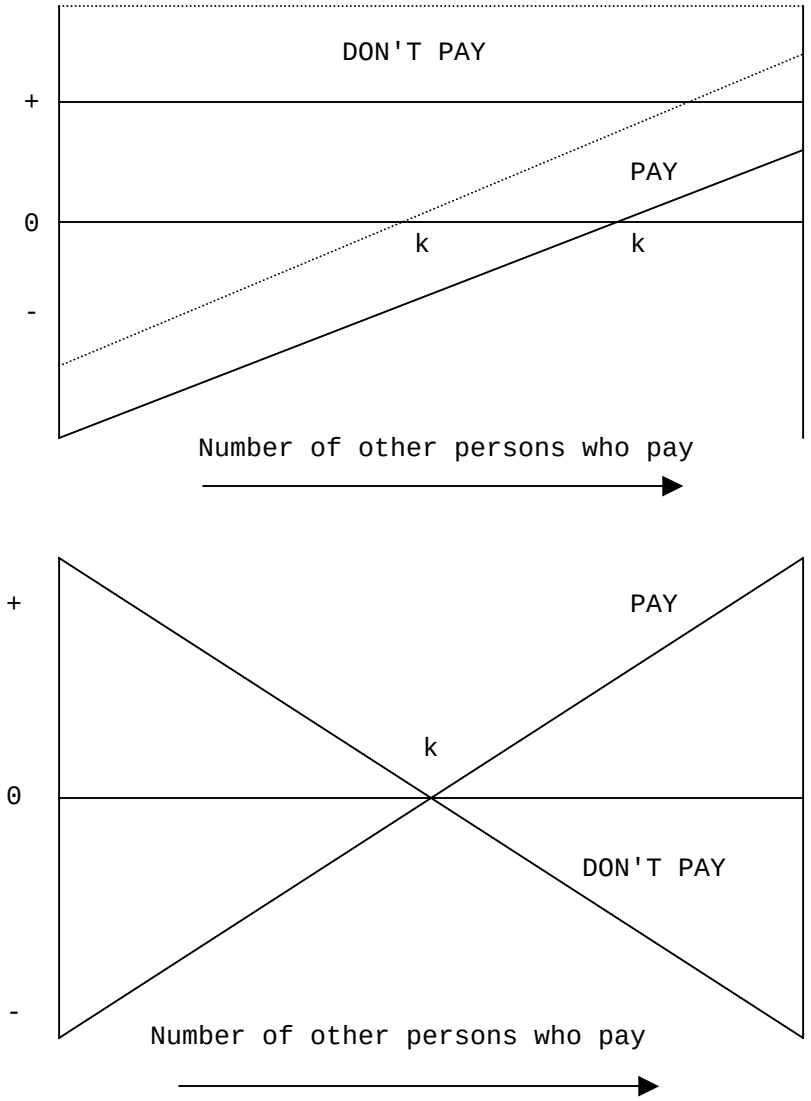
advantage to this choice decreases as more people contribute. Since all individuals are confronted with the same incentives, voluntary arrangements are not likely to make any of the public good available. Some form of coercion must be applied to derive payment, at least until a large enough portion of the population is paying so that individual costs are less than individual benefits. Any coercive arrangement that excuses some individuals, however, will have the additional income distribution problem of selecting the individuals who will be positioned along which curve.

6.2.2. Common Pool Good

Mancur Olson (1965) is usually credited with pioneering the analysis of institutional difficulties of financing public goods. And while much of his analysis applies to such problems, his basic model specifically deals with common pool goods. These are goods characterized by infeasibility of exclusion combined with a high degree of subtractibility. Once the good is available to one person, it is available to everyone in the collectivity, but the good is also vulnerable to erosion. As one person uses the good, less in quantity and/or quality remains for others.

If assumptions regarding supply and demand for the above case of public goods are retained in the case of common pool goods, Figure S results. The PAY curve shifts downward from the position in figure (the broken curves in Figure 5 are reproduced from Figure 4) because in this case the buyer is not assured of realizing all of the potential benefits. The buyer may be the only person paying the supply price but not the only person using the good; because others are not excluded from consumption. But high subtractibility means that consumption by others entails less of the good for the buyer to consume. Benefits to the buyer from a given supply are therefore reduced. Though not shown in Figure 5, the downward shift can be sufficient to eliminate

Figure 5


DON'T PAY
+
PAY
0
k
k
-
Number of other persons who pay
+
PAY
k
0
DON'T PAY
-
Number of other persons who pay

any positive gains from contribution, even when many individuals contribute, thereby resulting in a PAY curve that does not intersect the zero horizontal line.

The benefits to the choice of not paying the supply price similarly shift downward relative to Figure 4, and for the same reason. The benefits even to free riders are subject to: erosion s others share in the use of the good. Given the degree of subtractibility;, the-positions-of both the PAY Band DON'T PAY curves depend on the quantity of the good relative to the size of the collectivity. The slopes, however, are the same as for public goods, because erosion is not related to the number of persons contributing toward the good.

The implications are that the incentives for voluntary contributions toward the good are weaker than in the case of the public good. A greater number of the population must elect to pay before any realizes a net gain (compare k' with k), and as indicated, such gains may never materialize if erosion is high. While the payoffs to free riding (i.e., choosing DON'T PAY) are lower than in the case of public goods, but the advantage over paying remains. Again, voluntary arrangements will fail to make the good available to consumers. Coercive arrangements must be developed taking into account the income distribution problem mentioned above.

6.2.3. Toll Good

A toll good is one with a low degree of subtractibility combined with high feasibility of exclusion. Thus, one person's use has negligible effect on the quantity of quality of the good available to others, and in that respect the toll good is like the public good. But the toll good differs from the public good, because individuals can be required to pay for their use of a toll good. This combination of characteristics yields payoff patterns illustrated in Figure 6.

The demand and supply assumptions are retained from the case of the public good -- only the nature of the good is changed. As the toll good is similar in nonsubtractibility to the public good the PAY curve is identical to the PAY curve in Figure 4. The curve shows a negative payoff when only a few individuals agree to pay causing the cost of supply to exceed individual benefits. The PAY curve rises eventually to yield a positive payoff as the number sharing the supply price increases.

The payoff to a decision against paying the supply price differs markedly between the public and common pool goods. High feasibility of exclusion means that the individual realizes no benefits unless he pays. Of course, he also saves the supply price of the good by not making the expenditure. The net result, that is whether the decision to not pay yields a gain or loss, depends on the comparison between the individual's valuations of the good and his share of the supply price. If benefits exceed the cost, the decision maker sustains a net loss by not paying the price, and if the cost exceeds the benefits, as is assumed here, the decision maker realizes a net gain. The negative relationship between the individual's share of the cost and the number of contributors, in the case of a nonsubtractible good, causes the net loss from not paying to rise as contributors increase. The DON'T PAY curve illustrates this by sloping downward to the right and forming a mirror image of the PAY curve. Intersection between the two curves occurs at k, where the individual's share of the costs equals the individual's benefits.

Clearly the incentives in a voluntary arrangement involving a toll good depend crucially on the number of people who choose to pay. If the number is less than k the individual has the incentive not to pay, although the advantage of that choice indicated by the vertical distance between the curves, weakens as k is approached. But when k or more contribute, the incentives

reduced to yield net benefits from contributing. At the same time these benefits are forfeited if the individual does not contribute. The institutional implication is that only a part of the collectivity needs to be coerced to contribute to the toll good; once that contribution is assured the rest of the population will pay voluntarily.

A bridge, for example, may be financed totally by-a voluntary toll Scheme if a certain critical number of users can be assured to share the costs.* Below this number no one will pay the toll, and the bridge will stand unused. Tax financing will then be required.

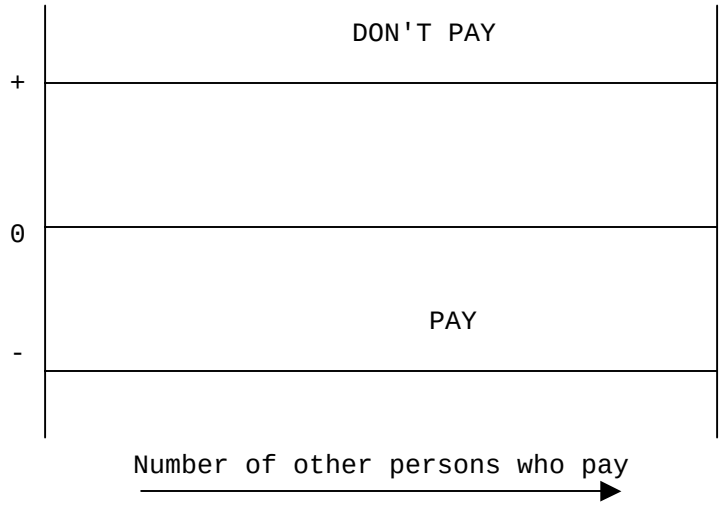
6.2.4. Private Good

Finally the private good case is considered. In this case exclusion is feasible and the good is highly subtractible, yielding the payoff curves in Figure 7. Again, the PAY and DON'T PAY curves are mirror images of each other, for if net lasses result from payment, these are spared by a decision not to contribute. The curves, however, have zero slopes, because the payoffs to the individual decision maker are not affected by the actions of others.

Figure 7 shows that voluntary arrangements will not make the good available for consumption. The DON'T PAY curve at all points lies above the PAY curve. But that results strictly from the assumption that the supply price exceeds the individual's valuation of the good. Dropping this assumption would reverse the positions of the curves, and voluntary payment arrangements would suffice.

Construction of Figure 4-7 depends on specific assumptions about demand supply conditions.** A change in the assumption about the positions of individual demand curves relative to the supply price, for example, changes the positions of the R and L curves in each of the diagrams. If each individual values the good sufficiently to pay the supply price, the PAY and

Figure 7



situation voluntary payment, even when the individual is the only contributor, does not involve losses, although the incentives to free ride remain. Upward shifts likewise occur in Figure 5, except that the subtractible nature of the common pool good keeps both curves below their respective positions in the public good case. Point k is likely to remain to the right of point zero, indicating that net losses will accrue to voluntary contributors until-some critical number of contributors is attained.

The altered assumption about the demand and supply positions in the: Cases of the toll good (figure 6) and the private good (Figure 7) causes the PAY curves to shift upward and the DON'T PAY curves to shift downward. In Figure 6 the slopes would remain the same, but both curves would eminate from 0, indicating losses from deciding not to pay and gains from-contributing irrespective of what others decide. The advantage of PAY over DON'T PAY, however increases as additional individuals contribute. The reversal of the PAY and DON'T PAY positions in Figure 7 were discussed previously.

This presentation, even with restrictive assumptions, reveals the close relationship between the characteristics of goods and institutional arrangements for making goods available to individuals. Voluntary arrangements, where persons individually decide to pay the supply price, will tend to fail to bring forth payment as long as the PAY curve lies below the DON'T PAY curve. Such failure is especially likely when portions of the PAY curve lie in the negative quadrant of the figure. Efficient allocation of resources can then recommend (if PAY is positive at any point) some form of institutional coercion or reciprocity* among individuals to make the good available for consumption.

6.3. Empirical Research and the Characteristics of Goods

Despite the long-lived conceptual distinctions among types of goods, Many political scientists and economists remain skeptical about the value and

even the validity of the distinctions. Roger Hansen (1977) puzzled about the relative indifference in political science to the concept of public goods, even though the concept has opened new areas to analysis. He is particularly disturbed by evidence that governments devote preponderate shares of resources to private rather than public woods, when theory generally concludes that public goods are the proper domain for government.

Empirical support for Hansen's concerns exist in studies by Borcherding and Deacon (1972), Bergstrom and Goodman (1973), and Frey and Pommerehne (1978). Borcherding and Deacon estimated the demand for public services from state expenditure data on education, highways, health, police, fire protection, sewers-sanitation, and parks-recreation. Their estimation equation includes a term for the degree of divisibility or capturability of the good. While Borcherding and Deacon are skeptical about the influence of statistical problems on their findings for this tern, their results suggest that state expenditures are directed toward private or quasi-private goods rather than public ones.

Bergstrom and Goodman reach similar conclusions from their analysis of municipal expenditures on police, parks and recreation, and on total municipal services. Their results suggest that tax shares tend not to decline as population increases, as would be expected with public goods. The implication is that municipal governments finance private goods, instead.

Conventional welfare theory in economics argues that government financing, of goods should be restricted to public goods, where markets fail to allocate resources efficiently. These empirical findings suggest that nonmarket failure can also result, as individuals are able to use collective institutional arrangements to their own advantage by transferring the costs of their private goods to others through coercive arrangements. But, for purposes of the present discussion, an alternative conclusion might be that

the nature of goods has not been adequately conceptualized. The four-way categorization reviewed in Figures 4-7 in fact, indicates that the definition of public (collective) goods in this empirical work is unduly restricted to tile subtractibility feature. Introduction of the exclusion feature opens the possibility for coercive financing of subtractible goods.

7. LEVELS OF DECISION MAKING

The difficulties for individuals in relying upon voluntary exchange arrangements to gain access to goods and services possessing collective characteristics invites inquiry into the design of alternative arrangements. Such inquiry occupied the attention of Hobbes (1651), Hume ( ), Rousseau (1762), Hamilton and Madison (1788), and more recently Buchanan and Tullock (1962) and Olson (1965). The list still grows.

Broadly speaking, analysis of this sort develops on two levels -- one Dealing with the design of organizational arrangements and the other with decisions regarding the production and consumption of goods and services. The first concerns the structuring of rules by which production and consumption decisions will be made and is thus the more fundamental, but a complete analysis involves both. The literature frequently distinguishes between the two by reference to constitutional and operational levels of decision making.* A convenient analogy is the distinction between constructing the rules of a game and developing strategies during the play of the game.

The two levels of analysis proceed along suite different lines, for the incentives and constraints upon decision makers change as individuals shift from one level to the other. Consider, for example, issues confronting an individual involved with the public good in Section 7, Figure 4. The operational strategy for the typical individual in a voluntary payment arrangement will be to not pay for the good. But that means no one enjoys the good, that the good will be undersupplied because the producer has no incentive to supply it unless others pay for it. Everyone would be better off paying a fraction of the supply price making the good available to all. Incentives confronting decision makers in the voluntary arrangement result in everybody being less well-off than is possible. Institutional change is in order.

payment for the good and includes issues such as how the payment decisions will be made, what goods and services will be handled, who will pay and who will enjoy the good, etc. The arrangement may still be based on voluntary association with assurances of reciprocity worked somehow into the structure. Or the arrangement may involve coerced payments with individual shares determined by general ballot or designated decision makers.

If a coercive arrangement is selected, the individual may face incentives as developed by Buchanan and Tullock (1962: Chapter 6) for determining a voting rule by which the payment shares will be decided. The issue is no longer whether the individual will pay or even hw much, but how the amount is to be decided. This is a constitutional decision. Once the voting rule is determined individual decision makers can proceed to vote on the distribution of cost shares. That action occurs at the operational level of decision making.

Not all writers in political economy consider the constitutional-operational distinction relevant. Those, for example, in the tradition of Woodrow Wilson* who are persuaded that organizational arrangements do not significantly affect the results of human interaction, are more concerned with piercing the veil of organizations to identify the crucial center of power. Organizational arrangements, to them, are the means by which decisions made at power centers are transmitted to others in the organization.

The essential difference between the micro-institutionalist view with its distinction between constitutional and operational levels of analysis and the Wilsonian view is the concern for the maintenance of self government. Micro-institutionalists look to the constitution or the design of institutions as a means to maintain self government, while the Wilsonian school looks to the design of institutions to facilitate the transmission of decisions. Micro-institu-

decisions forthcoming from the structure, while Wilsonians argue that structure does not matter.

According to the logic of constitutional choice,*organizations for human interaction do not just happen. Government is an artifact and, as with all human artifacts, is constructed with a purpose. Thus, government structures have performance potential as well as behavioral characteristics (Ostrom, 1976: 32). The analyst's task is to determine that potential.

Any individual involved in the public good situation illustrated in Figure 2 will deduce that is more than individuals share the supply price that everyone will be better off than if everyone relies on someone else to pay the costs. Logical deduction, then, would lead individuals to recognize the fallacy of composition situation they are in as individuals. But logic alone will not suffice to bring forth individual contributions; individuals require assurance that others share these logical conclusions and more importantly assurance that when one contributes all contribute. Individuals require an enforceable agreement with each other that forecloses cheating. With such an agreement each can make a decision to pay knowing that others will also.**

Institutional arrangements binding people to fulfill obligations requries an unequal distribution of authority among members of the institution. Someone must have the authority to enforce the rights-duties configuration among individuals within the collectivity. But such authority is corruptible. Individuals with authority over others can take advantage of the power for personal gain, unless prevented by the institutional arrangements. Micro-institutionalists assume that persons in positions of authority are no better or worse than other individuals and will seek to advance their own interests just as will individuals without extraordinary authority. Officials simply possess greater means to pursue private interests to the detriment of others.

Institutional design must, therefore, deal with the dual and seemingly

Hobbes (1651) saw no way around this contradiction, and opted for agreement despite the danger. The danger in his view, is less harmful than the state of war that would result without the agreement. Hamilton and Madison (1788), on the other hand, argued for a federal solution to prevent officials from taking advantage of the necessary political inequality. In their view, carefully designed institutional arrangements can maintain self government within contexts of political inequality.

The discussion of institutional design or constitutional analysis is frequently developed with application to formal government arrangements, as exist at the national, state, and local levels in the United States, but as Ostrom and Hennessey (1975) indicate, the principles apply to all arrangements for interaction among individuals. Thus, the distinction between constitutional and operational levels of analysis applies to a wide variety of institutional arrangements. Perhaps a review of a paper that does not make the distinction in an analysis of a governmental institution will clarify this discussion.

A paper by Neils and Vache (1978) investigates the potential for an economic analysis of administrative tribunals. A topic that heretofore has received scant attention from Political economists. Neils and Vache propose a property rights approach that considers the appropriation and attenuation of rights to litigants and to officials within judicial institutions. They focus on the shifting nature of these rights. Neils and Vache also propose that analysis recognize real institutional constraints on decision making which necessarily produce suboptimal results. Rather than assess results by reference to some impossible standard, as optimality analysis usually does, Neils and Vache advocate a focus on feasible improvements.*

Their paper specifically traces changes of property rights in the jobs held by individuals and changes in the decision-making property rights of hearing examiners. Significant advances in the powers of hearing examiners to decide property rights in jobs are clearly documented. While appeal of

administrative decisions to the courts remains and is important to determining

cases, hearing examiners wield considerable authority. Neils and Vache liken the hearing examiner to a quasi-trial judge.

Their analysis clearly takes an institutional perspective, but does not make a distinction between constitutional and operational levels of analysis. Decisions regarding the rights of litigants are treated on a par with decisions regarding the authority of officials, although the latter affects the former.

A constitutional operational distinction does not treat the litigants and officials as equivalent, because of the influence one has on the other. The authority of officials, according to constitutional analysis, is fundamental to interactions among individuals within the institution. Constitutional analysis calls attention to the source of shifting authority among officials and determines whether the shifts result from actions by officials or by citizens. If the changes are determined by officials without alternative remedies, as appears to be the case in the Neils and Vache presentation, constitutional analysis concludes that the principles of self government are violated and recommends institutional reform. Analysis does not proceed simply as though increased power among officials is a part of reality within which ordinary decisions regarding human interaction must occur.

Constitutional reform probably conjures up images of momentous occasions involving convention and ratification debates followed by solemn ceremonies to initiate the new constitution. But that is not envisioned in the concept of constitutional analysis used here. The design of institutional arrangements is forever an ongoing process. Humans are not able to anticipate fully the consequences of- complex decision-making arrangements. Mistakes, therefore, will be made.** Moreover, technological changes shift relationships among individuals giving rise to new common-pool problems and eliminating others. Also, as institutional arrangements are experienced and thus more thoroughly understood, individuals find opportunities to turn the arrangements to their own advantage. Institutional failure is, thus, endemic. Political economy, as perceived by micro-institutionalists, does not present this failure as given,

but incorporates the possibilities for and the correction of institutional failure into the analysis and design.

Footnotes

Page 3 *See 'S. Samuels for an extended discussion of deliberative and nondeliberative institutional forces in classical economic literature.

Page 5 *See discussion in Brian Barry, Sociologists, Economists, and Democracy.

Page 7 *See the median voter theorem in H. Hotelling, 1929; H. Bowen, 1943-44; and J. M. Keynes, .

Page 9 *Insights in sociology regarding institutional formation and effect are also germane, as Brian Barry (1978)and Mancur Olson (1969) effectively argue. Many sociologists have focused, though, largely on social systems that force human activity and have tended to negate the role for individual decisions within those arrangements. Recent work, however, suggests that this focus might be changing thereby increasing prospects for cross fertilization among sociology, economics, and political science (O'Brien, 1975; Coleman, 1973).

Page 10 *See G. Tullock (1972) for a discussion of the human capital aspects of intellectual conservatism among scholars.

Page 11 *The resentment of some noneconomists of the expansion of economists into policy fields is illustrated by Richard Titmuss's criticism of many economists whom he asserts "after taking strong oaths of ethical neutrality, perform as missionaries in the social welfare field and often given the impression of possessively owning a hot line to God" (1970; 199).

Page 12 *See discussions of academic imperialism in Tullock (1972), Boulding (1969), and Gruchy (1976).

Page 12**Short of empirical investigations of theoretical implications, theory can also be evaluated according to insights that it yields into real world phenomena. This is the kind of test Ilchman and Uphoff (1969) apply when they imagine the political leader of an emerging nation trying to govern through the use of traditional political science and economic theories, Ilchman and

Uphoff argue, in effect, that insights for this purpose are sparse and thereby develop the rationale for presenting a "new political economy."

Page 6-3 *This is distinct from the jointness of consumption characteristic, thought the two are frequently confused by reasoning that a nonjointly consumed good necessarily excludes others from consumption when the good is consumed by one individual.

Page 6-3**Analysis of public goods according to this distinction is developed in detail by Mancur Olson (1965).

Page 6-5 *Figure II is reproduced from Ostrom and Ostrom (1978), p. 12.

Page 6-7 *Writers, like Oakerson (1978), consider the effects of durability and the time-space requirement separately by referring to the first as subtractibility and the second as divisibility. Where analysis deals with the erosion of collective goods, as Oakerson's does (also see Buchanan, 19), this additional distinction might be useful.

Page 6-7 **Hart and Cowhey (1975: 352-353) treat appropriability and the feasibility of exclusion as distinct characteristics.

Page 6-8 *See Ostrom and Ostrom (1978: 14).

Page 6-9 *See Hart and Cowhey (1977) and Riker and Ordeshook (1973: 73-74fn).

Page 6-l8 *The assumption of nonsubtractibility in this case is an assumption that the critical number of users does not approach the capacity of the bridge where congestion sets in.

Page 6-18 **Development of the effects of these assumptions in the case of public goods appears a Frolich, Hunt, Oppenheimer, and Wagner (1975).

Page 6-20 *See the discussion concerning institutionalized reciprocity in Oakerson (1978).

Page 7-1 *See, for example, Hamilton, Madison, and Jay (1788:), Buchanan and Tullock (1962: Chapters 5 and 6), and V. Ostrom (1976).

Page 7-2 *See Frank Goodnov ( ) and Lilliam Piker ( ).

Page 7-3 *The logic of constitutional choice has been developed in a number of papers by Vincent Ostrom (1976a), (1976b), (1976c), (1967d), and V. Ostrom and T. Hennessey (1975). The discussion in this section follows that development

Page 7-3 **See the response by V. Ostrom to Dennis Mueller's discussion (1978) of the compliance problem in the social contract where Ostrom notes that a contract that ignores enforcement procedures is of little value. Such a contract is simply so many words.

Page 7-4 *Their closing comments suggest, however, that Neils and Vache are also concerned with achieving some sort of end that does not appear to materialize from present arrangements. They write:

> The need for comprehensive analysis, integrating the administrative adjudicative process into the overall scheme of justice and for detailed case studies of particular agencies is great because alas, the expectation that the administrative process would provide quick and inexpensive justice has -- to put the matter charitable -- not always been fully realized. Even a cursory examination of today's administrative agencies would indicate that it is charitable indeed (1978: 32).

Page 7-5 *The constitutional-operational distinction calling particular attention to the source of official authority and juxtaposing that source to the source of rights among individuals is especially clear in an extension of John R. Commons's legal analysis proposed by V. Ostrom (1976b). The Neils-Vache analysis is subject to the same criticism that Ostrom directs at Commons's work.

Page 7-5 **A classic example of a mistake in design is the Articles of Confederation, as discussed in The Federalist (1788:) and V. Ostrom (1976a: 6).