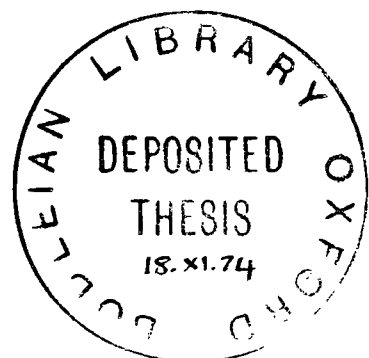


POLITICAL RATIONALITY

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A B S T R A C T

This thesis investigates the political scientific implications of the postulate that political actors behave as if they were Rational (i.e., Economic) Men. The basic aim of the theoretical discussion is to explain both the existence and substance of norms of social cooperation. Rational Men would cooperate under special circumstances constituting a "coordination problem." Depending on the details of the situation, they would organize their cooperative efforts through either social processes of mutual adjustment or political-legal processes. The substance of the code of political morality Rational Men would embrace combines an Aggregative Principle that total goods available to society as a whole be maximized and a distributive Works Principle that each individual should prosper according to his own works. The results of this theoretical analysis are subjected to two extended empirical tests. The first is whether the Rational Man code of political morality corresponds in essential respects to the norms of political morality as revealed by linguistic analysis. The second test utilizes both of the theoretical arguments to explain the politics of environmental protection. The Rational Man model can explain the fact of pollution, the demand for governmental intervention, the opposition of some men to such intervention, the details of environmental protection laws and the shape of the international dispute.

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PART I

INTRODUCTORY

CHAPTER 1: INTRODUCTION

Political science as an academic discipline is characterized by the kind of question it asks as well as by its subject matter. Not all intellectual (nor even all academic) reflections on politics count as exercises in political science. The distinctive feature of the discipline is its aim, the explanation of political behavior. Working with raw factual data, often provided by political journalists and historians, the political scientist attempts to construct some coherent explanatory model to fit observed facts. At its best, the process of explanation is prediction in reverse; what a model can explain in retrospect it should have been able to predict beforehand. So the goal of political science is to produce theories explaining past political behavior and predicting future actions, both in controlled experimental situations and in the larger social realm.¹

Several basic approaches are available to inform political scientific theories. This essay explores and applies one of these general patterns for explaining political behavior. The model derives its name from its most central notion, that of a Rational Man, a prudential fellow who chooses means appropriate to whatever ends he happens to fancy. (Later the focus will narrow to a subspecies of Rational Man, rational egoists, in order to ease application of the model.) The basic form of explanation is that men in the empirical world will behave as if they were Rational Men. The model explains

a man's past choices by explaining how his actions helped him get something he wanted, and it predicts for the future he will choose the course of action promising to maximize his chances of getting what he wants.

To identify an ongoing intellectual enterprise, it is often helpful to nod in the direction of a series of "great books." There is nothing new in fashioning man as a means-ends calculator--suggestions of it are contained in Thrasymachus' comments to Socrates and in Machiavelli's writings. The impetus behind the latest round of Rational Man theorizing might be found in the political tracts of Jeremy Bentham and James Mill. Their work had a more lasting impact on economics than politics, and the felicific calculus became the core of conventional explanations of the choices of "economic men," both consumers and entrepreneurs. Perhaps the first signal of a return of economic methods to overtly political applications came in Kenneth Arrow's axiomatic analysis of the voting paradox in Social Choice and Individual Values. Use of the explanatory tools of the Rational Man model is the unifying thread in a series of modern classics: Anthony Downs, An Economic Theory of Democracy; William H. Riker, The Theory of Political Coalitions; James Buchanan and Gordon Tullock, The Calculus of Consent; and Mancur Olson, Jr., The Logic of Collective Action.²

Admittedly, the analytic construct of a Rational Man

vastly simplifies the complexities of empirical men and, therefore, lacks a certain measure of realism. This is an inherent characteristic of analytic constructs. The point of devising such models is to isolate certain aspects of the real world in order to analyze them more effectively. A construct as complicated as the empirical world defeats its own purpose. The following expression suggests the considerations ordinarily used in evaluating the efficiency of an analytic construct:

$$\text{efficiency} = \frac{(\text{effectiveness in predicting})}{(\text{number of assumptions}) (\text{sophistication of information required})}$$

No doubt a model with many assumptions and using very sophisticated information will explain a wider range of phenomena more accurately than a model using few assumptions and crude information. The simple model might nevertheless be preferable to the complicated one because the superior explanatory power of the latter is not worth the costs in terms of the additional information and assumptions it requires.³

One way in which the Rational Man model deviates from empirical reality is in its account of the mental processes of decision-makers. Few actors and fewer psychologists would agree that the maximizing logic discussed in Chapter 2 constitutes a full and accurate account. Of course, the model is intended only as an explanation of economic and

political behavior; and it succeeds (on its own terms, at least) if it explains and predicts what men do, not the reasons they give for doing it. Some criticize that choice of focus, insisting that the model should attempt to account for both. The choice is more frequently criticized on pragmatic rather than on principled grounds, the argument being that the model would better explain what men do if it more faithfully mirrored the mental processes producing their decisions. The analysis of theoretical efficiency above emphasizes that there are two elements to consider before building a model of cognition into a model of social behavior: one element is the accuracy and scope of predictions, both of which would probably be improved by such a move; but the other is the number of assumptions and sophistication of information that would be required, both of which would be substantial and probably sufficient to outweigh any gains from better predictions. That course is, therefore, eschewed in this essay.

The decision is obviously based on the unstated assumption that the Rational Man model can produce tolerably accurate predictions without perfectly reflecting the details of mental processes. A wide range of examples seems to suggest that this is possible. The professional pool shark puts balls into the pockets of the table without knowing the physics of Newtonian mechanics, but to be successful he had better behave as if he were guided by those calculations; and since unsuccessful pool sharks soon change their occupation

it is not absurd to predict that practicing professionals will behave as if they calculated the angles and force of their shots according to Newton's laws.

Most businessmen are surely guided by rules of thumb instead of econometric calculations, but they will soon go out of business unless they behave as economists predict profit maximizers would behave. Indeed, the "behavioral theory of the firm," an attempt to mirror mental processes of businessmen, has yet to produce sufficiently better predictions than the profit maximizer model to justify adoption of the complicated new theory.⁴

Consider, again, the dispute over the "rationality" of the U.S. electorate. Surveys convincingly demonstrate that voters do not acquire sufficient information about each candidate's stand on the issues to make an issue-based choice between them. The surveys also show, however, that individuals fairly consistently vote their party allegiance and, as V.O. Key argues, voters do tend to favor the party most sympathetic to their policy preferences. (This might be because they choose a party on the basis of its platform or, more likely, because both their policy tastes and party allegiances were acquired from the same source, their parents.) Thus, a model would not be far off the mark in predicting that voters favor candidates closest to themselves on the issues.⁵

Applications of the Rational Man model itself suggest that a model might yield accurate predictions of social

behavior without perfectly reflecting actors' mental processes. The most conclusive results come from tests of those aspects of the model which are most amenable to statistical evaluation, Downs' Economic Theory of Democracy and Riker's Theory of Political Coalitions. Ultimately more persuasive, however, are the successes of the model at a more casual empirical level in explaining a wide range of phenomena from bureaucratic behavior to international politics.⁶

Intuition counsels that an analytic construct is more likely to be accurate in its predictions when it more faithfully reflects reality. This argument, however, cuts both ways: it is ordinarily deployed in an attempt to force revision of the Rational Man model's picture of the mental process; but conversely, if the model's predictions are correct then it probably does approximate some central feature of the empirical world, in this case the mental processes of decision makers. The converse is not necessarily true, but there is a strong probability of it being true. The real universe might have the Earth at its center even though "all celestial appearances are explained better" by the Copernician system, as sympathetic Churchmen urged Copernicus and later Galileo to argue to forestall heresy charges, but those scientists were right to think that possibility highly unlikely.⁷

Some of the confusion about Rational Man models of politics stems from the lack of a general statement of the

logic of a Rational Man explanation. In all the above "classics" the author discusses the rationality postulate and moves fairly directly to its implications for whatever specific problem he intends to explore. The popular suspicion that the model seems to have limited applicability is a direct result. Its applicability seems limited because the model has been applied to a limited range of problems without any attempt at extending its logic beyond those particular applications.

In general, to predict political outcomes the analyst must know three things: the rules of the political game, including informal norms and "folkways" as well as formal rules; the dispositions of all those individuals whom the rules pick out as relevant for the decision at hand; and the relative power of each relevant actor. A Rational Man model predicts only one of these, actors' dispositions, on the basis of statements about individuals' preferences. Before a Rational Man model can yield a prediction of a political outcome, the analyst must feed into the model information about the rules of the political game and power distributions. (Some of the rules are derived from Rational Man postulates in Part III, but surely all rules cannot be derived a priori.) Although the model is not a self-starter it is at least potentially a complete model: given the initial preferences, rules and power distribution it could in principle predict changes in all three. The dynamics of the model are

substantially determined by actors' dispositions to attempt to make changes, but other significant influences include their power and opportunities (created by the rules of the game) to do so.⁸

This essay works within this general framework to explain selected aspects of political behavior. Its argument consists in three successive explanations, each one building on the one preceding it. Part II develops the most fundamental point, that Rational Men will strive to coordinate their behavior. Under certain conditions, government is required if coordination is to be effective; but in other circumstances social processes will suffice. Part III discusses principles which Rational Men would use to guide their collective activities and shape their social and political institutions. One particular coordination problem, protection of the human environment, is analyzed in Part IV in light of the theory developed. Thus, a general Rational Man pattern for explaining social cooperation will be developed and illustrated.

Perhaps it is always justifiable to extend the explanatory power of a social scientific model on the grounds that the cause of knowledge, an indisputable good, is being furthered. There is, however, an especially strong case for attempting to extend the Rational Man model in this particular direction. The case is and must be made in terms of current trends in the social sciences. Conceptual models

as explanatory tools have begun to flourish. With the proliferation of models has come the realization that each model is especially well-suited to the explanation of a usually narrow class of events. Cautious scholars will naturally--some go so far as to suggest they should logically--choose the model best suited to the type of events they seek to explain.⁹ When a new model is discovered or an old one is refined, its peculiar explanatory talents are assessed and it is assigned a certain range of political phenomena accordingly. An unfortunate result is that political science is moving away from general explanations and toward providing ungeneralizable explanations of unique events.¹⁰ This fragmentation of the discipline, with each small class of events having an explanatory model all its own, is an unhappy development in light of the criterion of theoretical efficiency discussed above. Very few phenomena are explained and it takes rather a complex bundle of assumptions and information to do it. It would be obviously more efficient to work within a single model to show that the model can really explain a larger class of events than commonly supposed without adding any further assumptions and only a little more information. This is the basic goal of the present essay.

It is commonly supposed that the Rational Man model is well-suited to explain conflictive behavior but that some other model (eg., Parsonian functionalism) is better adapted to the problems of cooperation.¹¹ This intuition has a

certain superficial plausibility. Since conflict is usually dysfunctional, it seems inappropriate to Parsonian models. Everyday economic relations (as between a buyer and seller, for example) are such that one man's gain comes out of the other's pocket, and Rational Man models based on such experiences could be expected to explain conflict but not cooperation. The argument of this essay is that this intuition is actually ill-founded, that the proliferation of models is unnecessary because the Rational Man model can explain the details of observed social cooperation.

NOTES

¹ This paragraph states predispositions with no attempt to argue for them. Doubters are referred to Alan Ryan, The Philosophy of the Social Sciences (London: Macmillan, 1970) and a collection edited by May Brodbeck, Readings in the Philosophy of the Social Sciences (New York: Macmillan, 1968).

² Classics generate classical commentaries: see Brian Barry, Sociologists, Economists and Democracy (London: Macmillan, 1970). Also see Michael Taylor, "Review Article: Mathematical Political Theory," British Journal of Political Science, 1 (1971), 339-82.

³ This utilizes the measure of efficiency of acceptance rules suggested by Alex C. Michalos, "Cost-Benefit versus Expected Utility Acceptance Rules," Theory and Decision, 1 (1970), 61-88. Similarly, Milton Friedman, "The Methodology of Positive Economics," Essays in Positive Economics (Chicago: University of Chicago Press, 1953), 3-43, argues that "a hypothesis is important if it 'explains' much by little" and posits two criteria for evaluating analytic constructs: "A theory is 'simpler' the less the initial knowledge needed to make a prediction within a given field of phenomena; it is more 'fruitful' the more precise the resulting prediction, the wider the area within which the theory yields predictions, and the more additional lines for further research it suggests." Accepting these criteria does not commit one to Friedmanite excesses such as embracing the theory that leaves arrange

themselves on trees so as to maximize the amount of sunlight they receive. This "theory of the wandering leaf" is inferior on Friedman's own criteria to more ordinary botanical theories because, while the latter are more complex, they are also infinitely more fruitful.

⁴ Friedman emphasizes this point, as does Armen A. Alchian, "Uncertainty, Evolution and Economic Theory," Journal of Political Economy, 57 (1950), 211-21. Richard M. Cyert and James G. March, A Behavioral Theory of the Firm (Englewood Cliffs, N.J.: Prentice Hall, 1963) and Robin Marris and Adrian Wood (eds.), The Corporate Economy (London: Macmillan, 1971) discuss the behavioral theory of the firm. Robert M. Solow, "The Truth Further Refined: A Comment on Marris," The Public Interest, 11 (1968), 47-52 scores the telling point against it.

⁵ See, for example, Angus Campbell, Philip E. Converse, Warren E. Miller and Donald E. Stokes, The American Voter (New York: Wiley, 1960) for reports of the survey evidence. V.O. Key, The Responsible Electorate: rationality in presidential voting, 1936-60 (Cambridge: Harvard University Press, 1966) replies, and his position is further supported by Michael J. Shapiro, "Rational Political Man: A Synthesis of Economic and Social-Psychological Perspectives," American Political Science Review, 63 (1969), 1106-19.

⁶ The tests of the hypotheses of Riker and Downs are further discussed in William H. Riker and Peter C. Ordeshook, An Introduction to Positive Political Theory (Englewood Cliffs, N.J.: Prentice-Hall, 1973). Mark Sproule-Jones and Kenneth D. Hart, "A Public Choice Model of Political Participation," Canadian Journal of Political Science, 6 (1973), 175-84 find the Downsian model a powerful predictor of levels of participation; it could doubtless be strengthened by incorporation of revisions suggested by Donald A. Wittman, "Parties as Utility Maximizers," American Political Science Review, 67 (1973), 490-8. Robert Axelrod, Conflict of Interest (Chicago: Markham, 1970), Chapter 8 proposes a related revision in Riker's coalition theory; and Michael Taylor and Michael Laver, "Government Coalitions in Western Europe," European Journal of Political Research, 1 (1973), 205-48 find his Minimum Connected Winning coalition theory the most successful of any tested.

Examples of applications to bureaucracies include: Gordon Tullock, Politics of Bureaucracy (Washington, D.C.: Public Affairs Press, 1965); Anthony Downs, Inside Bureaucracy (Boston: Little Brown, 1967); and William A. Niskanen, Jr., Bureaucracy and Representative Government (Chicago: Aldine-Atherton, 1971). A Rational Man model informs two of the paradigms discussed in Graham T. Allison, Essence of Decision,

Explaining the Cuban Missile Crisis (Boston: Little Brown, 1971); Bruce M. Russett collects a wide range of papers analyzing international relations in Rational Man terms in Economic Theories of International Politics (Chicago: Markham, 1968).

⁷ An unsigned introduction to Copernicus, De Orbium Coelestium Revolutionibus written by Osiander, a Lutheran pastor, tries to make the work more palatable to fundamentalists by suggesting the purely hypothetical nature of the conclusions. It is a line of argument Copernicus himself explicitly rejects in the treatise. Kepler is reputed to have said the introduction was "written by a jackass for the use of jackasses." The defense was urged upon Galileo by Robert Cardinal Bellarmine, but Galileo, too, rejected it. See Giorgio de Santillana, The Crime of Galileo (London: Heinemann, 1958), 98ff.

⁸ C.B. Macpherson, "Market Concepts in Political Theory," Democratic Theory: Essays in Retrieval (Oxford: Clarendon, 1973), 185-94 is right to nudge the Rational Man model of politics in the direction of considering power distributions, a direction in which the model's economic kinsmen have already begun to move. See K.W. Rothschild (ed.), Power in Economics (Harmondsworth: Penguin, 1971). Johan P. Olsen, "Public Policy-Making and Theories of Organizational Choice," Scandinavian Political Studies, 7 (1972), 45-62 emphasizes the dynamics of the model thereby refuting claims (eg., Herbert A. Simon, Models of Man, Social and Rational [New York: Wiley, 1957], 165-9) that the model is necessarily static. Olsen conceptualizes the polity as a "meeting place for four streams: 1) a stream of choice opportunities, 2) a stream of problems, 3) a stream of solutions, and 4) a stream of participants or energy and skill. In this perspective a polity is a collection of choice opportunities looking for problems and solutions, issues and feelings looking for decision situations in which they may be aired, solutions looking for issues to which they might be the answer, and decision-makers looking for work" (page 53). A full account of the dynamics of a model of social behavior must deal with "habits" and "learning," which the Rational Man model could explain as a matter of individuals using rules of thumb to guide their behavior and revising the rules in light of experience.

Even with all this additional information that must be fed into a Rational Man model, it nonetheless remains a handy analytic step-saver in predicting individuals' dispositions. The hesitation to consider these other elements (especially power) compromises the model only in the eyes of those more attracted to the model because of its traditionally laissez faire conclusions rather than because of the

virtues of its methods of analysis.

⁹ For example, Allison, Essence of Decision finds certain aspects of the puzzle of the Cuban missile crisis better explained by different models: the original Soviet decision to place missiles in Cuba is best seen as a reflection of the bureaucratic politics inside the Presidium; failure to conceal the Cuban installations from American U-2's is a consequence of standard operating procedures of Soviet armed forces; the U.S. response to the crisis is best seen as the reaction of unitary rational actor. In an aside, Allison generalizes about classes of events to which each model is best suited (p.276); the analysis is carried substantially further by Johan P. Olsen, "Public Policy-Making and Theories of Organizational Choice," Scandinavian Political Studies, 7 (1972), 45-62, esp. 45-51.

¹⁰ Some, of course, deny that a general theory is possible at all; but it seems that the use of analytic constructs implies assent to the proposition that generalization is possible at least in some limited sense. Besides, starting with a general model and whittling it down seems to be an unnecessarily complicated way of producing a particularistic explanation of some phenomenon.

¹¹ Barry, Sociologists, Economists and Democracy, suggests this tentative conclusion in comparing economic (Rational Man) and sociological (functionalist) explanations of democracy. Ralf Dahrendorf, "Out of Utopia: Toward a Re-orientation of Sociological Analysis," American Journal of Sociology, 64 (1958), 115-27 puts the point more forcefully: "As far as I can see, we need for the explanation of sociological problems both the equilibrium [i.e., functionalist] and the conflict models of society; and it may well be that, in a philosophical sense, society has two faces of equal reality: one of stability, harmony, and consensus and one of change, conflict, and constraint. Strictly speaking, it does not matter whether we select for investigation problems that can be understood only in terms of the equilibrium models or problems for the explanation of which the conflict model is required. There is no intrinsic criterion for preferring one to the other." (Page 127) Similarly, David Lockwood, "Some Remarks on 'The Social System,'" British Journal of Sociology, 7 (1956), 134-46 argues that consensual phenomena require "normative" explanations and conflictual phenomena require "interest" explanations; and he supposes that a complete explanation of the social system must combine the two.

This seems to be a modern echo of the older arguments of Adam Smith, A Theory of the Moral Sentiments and David Hume A Treatise of Human Nature and An Enquiry Concerning the Principles of Morals. Smith and Hume maintain that "interest" is sufficient to explain much behavior but reference to "sympathies" is necessary to explain benevolent and moral behavior.

CHAPTER 2: RATIONALITY

This chapter defines the term "rationality" as it is to be used in this essay. It is essentially a matter of a man choosing means appropriate to his ends, as is discussed in Section 2-1. Before one can choose appropriate means, he must be clear about his ends. Section 2-2 discusses what this entails, and the third section concerns special problems of choosing action plans. This conception of rationality depends for its predictive power on an empirically accurate description of actors' goals, and Section 2-4 considers alternative ways for the analyst to go about specifying those goals. The final section considers the postulate that Rational Men will behave as if they were rational egoists and seek wealth and power as means to a variety of other ultimate ends.

2-1: Ends and Means

The term "rationality" can have very broad connotations. In the Oxford English Dictionary "rationality" is defined as "the quality of possessing reason; the power of being able to exercise one's reason." The Enlightenment Rationalist accepts only those propositions the truth of which can be demonstrated by the conjunction of fact and logic. Modern philosophers and psychologists specify several attributes of cognitive processes that betray the exercise of reason. One of the more important is capacity for abstract reasoning,

especially use of language.¹

Another way in which an individual might exercise reasoning powers is in choosing means appropriate to the realization of his goals. In this essay, the term "Rational Man" is reserved for individuals exercising their reasoning powers in this way. The means Rational Men select are "appropriate" to their ends in the sense that the means will contribute to the realization of chosen ends and that they will do so most efficiently, that is, no other available means would better further the chosen goals.²

This discussion is confined to that aspect of practical reasoning known as "prudential reasoning." An individual ought prudentially choose means best suited to the attainment of his ends. He is said to behave rationally if he does so. Whether he ought morally choose to behave in ways that will achieve his aims depends on whether those goals satisfy certain moral "desirability criteria." What an individual ought prudentially to do is not necessarily what he ought morally to do, so an individual behaving rationally is not necessarily deserving of moral accolades.³

This is to leave the choice of ends entirely to the actor himself. The selection of goals can be neither rational nor irrational within this understanding of the term. Before the analyst can appraise the appropriateness of means to ends (i.e., determine whether an individual has behaved rationally) he must first know what ends the individual desires to attain.⁴

2-2: Well-ordered preferences for goals

For an individual with a single goal, rational behavior consists simply in selecting the means best suited to attaining that goal. The implications of rationality are not so straightforward for actors with a plurality of goals. Suppose, for example, an individual has two goals achievement of which cannot always be simultaneously maximized; means appropriate to the attainment of one goal are occasionally inappropriate to that of the other. It is clear that before he can choose means appropriate to a plurality of partially incompatible ends he must first establish a way of making choices between the ends.⁵ That is to say, he must define some consistent preference ordering over the set of his goals.

Essentially what is required is for an individual to know his mind.⁶ This is ordinarily taken to imply three characteristics of the preference ordering for his goals. First, preferences must be asymmetrical. That is, if an individual prefers goal A to goal B he must not also simultaneously prefer goal B to goal A. Second, the preference ordering must be complete. Each goal must be related to every other goal either by a preference or an indifference relationship. Third, preferences must be transitive. If an individual prefers goal A to goal B and goal B to goal C then he must prefer goal A to goal C.⁷

Unless an actor establishes a preference ordering of this sort over his goal set he will be unable to make consistent

choices between goals and hence he will be unable to choose means to maximize net goal satisfaction. Someone whose taste for goals fails the first condition (asymmetry) is being patently contradictory. An incomplete preference ordering similarly stands in the way of consistent choice. An individual who does not know whether he prefers satisfaction of one goal to that of another cannot choose between means better furthering one or the other.⁸ Transitivity is, perhaps, a more dubious criterion. It might be objected that choices are not ordinarily presented to individuals in a pair-wise fashion and that the demands of consistency would seem to be met if the same individual regularly orders his preference for the same collection of goods in the same way.⁹ The logic of the transitivity condition is that any large set of alternatives can be partitioned into sets composed of two elements. Indeed, individuals seem ordinarily to go about constructing preference orderings over an unfamiliar set of alternatives by partitioning the set in this way and making pair-wise comparisons. Intransitivity would mean that an individual's preferences differ depending on how he looks at the problem, that is, depending on how he partitions the larger set of alternatives. Such inconsistency would obviously stand in the way of choice for individuals who do choose between several alternatives on the basis of pair-wise comparisons.¹⁰

When ordering his goals, an individual faces none of the difficulties which complicate his choices of action plans

for attaining his goals which are discussed in Section 2-3. He does not operate under conditions of risk or uncertainty-- these terms can only be used in relation to choice of courses of action, meaning as they do that the individual cannot predict with confidence the outcome of his actions.¹¹ Furthermore, he need not worry about relationships between goals, whether attainment of one will hinder achievement of another, in establishing a preference ordering over them. These problems are better considered at the level of examining action plans.¹² In ordering goals, an individual can ignore the real world feasibility constraints altogether and simply determine which goals he thinks more important and specify the trade-offs he would be willing to make between them.

2-3: Rational Choice of Action Plans

The most basic rule guiding rational choices of action plans is that a plan which better furthers a goal is preferred to plans which further the goal less well, ceteris paribus. The "other things" that must be equal if this rule is to apply are the effects of the courses of action on the attainment of other of the actor's goals. Occasionally there is a course of action that achieves all the goals that all other action plans taken together achieve and more, and such a course of action is unconditionally preferable

to those other action plans.¹³ More typically, different plans are better suited to different goals. Which plan or composite of plans an individual would rationally select depends on the relative importance he assigns the affected goals in his preference ordering.¹⁴

Choices of action plans involve complications not present in the task of establishing preferences for goals. Two of the more important ones are risk and uncertainty. While the two frequently go together they are logically distinguishable. Risk is involved where there is more than one possible outcome. A Rational Man makes risky choices on the basis of a calculation of his expected utility from each of the alternatives. His expected utility is simply the sum of his gain from each possible outcome discounted by the improbability of that outcome occurring. Uncertainty exists when the actor does not know the probabilities of different possible outcomes occurring. Flipping a fair coin, for example, involves risk (it might come up either heads or tails) but no uncertainty (the probability of each is .5). One possible response to uncertainty is to make choices on the basis of subjective estimates of the probability of events.¹⁵

Decision-makers often have the option of expending resources on the acquisition of further information to reduce the uncertainty or perhaps even to remove the risk. A rational means-end calculator decides to acquire further

information if he expects his choice made on the basis of the new information to be sufficiently better to compensate him for the costs of seeking the information. That is, he acquires information if and only if the cost of so doing is less than the difference between the utility he expects from the action he selects on the basis of the additional information and his expected utility from what he would otherwise have done. Thus, the rationality of acquiring information is seen to be a function of the probability that further investigation will disclose something important.¹⁶

An individual is said to behave rationally if he selects means appropriate to the maximization of net goal satisfaction. As Section 2-2 argues, that ordinarily requires him to define a preference function with certain "orderly" characteristics over the set of his goals. It is, however, important to realize that an individual rationally striving to maximize attainment of a well-ordered set of goals does not necessarily exhibit the same orderliness in his choice of action plans for realizing those goals. Von Wright supposes that there are different logical laws at work with respect to preferences involving risk and with respect to "conditional preferences," which arise because action plans are designed to achieve partially incompatible goals.¹⁷ Furthermore, choices made at one time might contradict choices made at some other time because the actor

has changed his mind (i.e., altered his preferences for goals) over that time period. Thus, it is not logically necessary that a Rational Man's choices of action plans be transitive or even asymmetrical.¹⁸

2-4: Specifying Goals

As is emphasized in Section 2-1, the present concept of rationality requires that individuals fix their own goals. The analyst cannot predict what course of action an individual would rationally pursue until he knows what goals that individual has. Theorists have three distinct ways around this problem of discovering goals.

One line of attack is to produce perfectly general theories which are valid for any set of goals individuals might choose to pursue. Although that degree of generality has yet to be achieved, some interesting propositions have purportedly been derived using only a weak constraint on the form (as opposed to the substance) of individual welfare functions. That is Wicksteed's principle of "non-tuism," which simply requires that individuals not take into account the interests of those with whom they deal in constructing their own welfare functions. On the basis of this principle Buchanan and Tullock derive their theories about The Calculus of Consent and Mancur Olson demonstrates the irrationality of voluntary contributions to the production of a public good for a large group.¹⁹ The conclusions of this essay

in Part II and much of Part III depend on nothing more than preference orderings satisfying the non-tuism principle, although Part IV requires substantially more.

"Non-tuism" might not be so innocuous a constraint as it seems. Apparently, it is frequently satisfied in some social contexts but only rarely in others. Interdependencies of individual welfare functions are common in family life but not in economic life, for example. The relevant difference seems to be the anonymity of the interaction; it is difficult to feel either benevolent or malevolent toward unspecifiable individuals. In economic markets the "cash nexus" assures anonymity, and as a result individuals seem to satisfy the non-tuism requirement when engaging in market transactions. Much of political life consists of the interaction of large groups of men, and such interactions are likely to be as anonymous as market transactions.

There are two ways in which the analyst might turn if the non-tuism constraint is not satisfied or if it is not enough for the purposes of his theory. One involves seeking empirical evidence of the goals individuals desire to achieve. The other involves postulating specific goals that he supposes empirical men actually do desire.

Economists and game theorists frequently search for empirical information regarding goals an actor desires before predicting what course of action he would rationally pursue. Analysts of consumer behavior surmise an individual's

"revealed preferences" from his past purchases and they predict his future purchases on that basis. Diplomats examine a nation's political history, its past behavior in the diplomatic marketplace, for clues to self-perceptions of the National Interest, perceptions which will presumably guide the nation's future behavior.²⁰ Similarly, Downs' Economic Theory of Democracy predicts how an individual will vote given his position and that of the political parties on the left-right ideological continuum. Downs predicts that an individual will vote for the party coming closest to promising him the policies he wants, but Downs cannot make any precise prediction of what party any given individual will favor without knowing what policies the individual wants.

The second strategy available to the analyst really amounts to a short cut. Instead of seeking direct empirical information about actors' goals, the analyst simply postulates goals he supposes actors probably do desire and he proceeds to make predictions about their behavior accordingly. In postulating goals, the analyst strives for an empirically valid account of actors' goals; but the great advantage of the process is that it avoids an unnecessary intermediate testing of the empirical validity of the postulates. If the postulates are empirically false, then the flaw will probably contaminate the theory and render its predictions inaccurate. Conversely, if the predictions are accurate the model (postu-

lates and all) probably captures some central features of empirical reality. The argument here is directly parallel to the one used in Chapter 1 to defend the postulate that men behave rationally.

The Rational Man mode of theorizing is justified in Chapter 1 in terms of theoretical efficiency, and the same principle justifies postulating actors' goals. A theoretical construct is efficient if it explains much social behavior on the basis of little information and few assumptions, and postulating goals reduces the amount of information required to yield a prediction. Of course, if the postulates are very inaccurate reflections of empirical reality then the gain in theoretical efficiency from postulating actors' goals might be offset by losses from less accurate predictions. But there is some point at which more accurate postulates about actors' goals do not yield sufficiently improved predictions of behavior to be desirable on grounds of theoretical efficiency.

Postulating goals is a popular approach to economic and political theorizing. The traditional economic theory of the firm is based on the postulate that the sole goal of the head of the firm is to maximize profits; and, in an explicit analogy, William Niskanen supposes that the sole goal of the head of a bureaucracy (or a component part of a bureaucracy) is to maximize his agency's budget. Anthony Downs postulates electing a government as the sole goal of

voters and forming a government as the sole goal of a political party; similarly, William Riker supposes the political party is solely concerned to maximize its influence within a governing coalition. To the extent these are offered as positive political theories, all theorists postulate goals they suppose actors actually do embrace.²¹

2-5: The Rationality of Egoism

For the purpose of the present analysis the weak constraint of non-tuism will usually suffice, but where it does not the goals of actors are postulated. While these postulates will not be tested independently of the predictions flowing from them, it is hoped they have a measure of empirical validity.

The postulate to be used here is that political actors pursue egoistic goals. That is to say, individuals aim at maximizing realization of self-interest. A Rational Man pursuing egoistic goals will consistently choose the course of action most appropriate to satisfaction of his self-interest.

The components of self-interest must be specified before this prediction can have any empirical content. An individual's self-interest is here narrowly conceived as the amassing of wealth and power. An individual's wealth consists in his ability to purchase goods and services, and his power (in

the broadest sense) consists in his ability to control events. Although quantities of wealth and power possessed by an individual are in principle specifiable without reference to the amount possessed by anyone else, their usefulness to him is highly relative to the amounts possessed by others with whom he interacts. A man spends his money to purchase things he wants, and the same amount of cash buys him more commodities when he bids against poorer men when he bids against wealthier ones. The same is true of power. Imagine two would-be extortionists with power over the same victim; one can evict him from his house and the other can deprive him of his life. Obviously, the latter will be able to extort much more money from the victim than the former.

An individual can ordinarily use wealth and power to influence the behavior of other men. With his wealth, one might purchase the services of others directly or he might indirectly alter their behavior by offering to purchase certain goods which they would not otherwise have produced. He might likewise use his power to control events as a bargaining resource for getting others to do things they would not otherwise have done.²² An individual's power over other men (that is, his ability to alter their behavior) must be distinguished from his power over events. One has power over other men only by virtue of his power to manipulate events to their advantage or disadvantage. How much

power he has over other men depends on how much they value the advantages and disadvantages within his power to confer. Thus, there is no necessary analytic connection between power over events and ability to alter behavior of men.²³

This is not the place for a detailed defense of the empirical validity of the egoism postulate as Section 2-4 suggests. It is, however, appropriate to suggest reasons for thinking the postulate not implausible. There are two especially appealing arguments.

First, the postulate is likely to afford an accurate explanation of social institutions regardless of its empirical validity. Even if most men behave benevolently most of the time, a society would be well advised to establish social control mechanisms as if citizens were egoists. No harm is done if the individual would have behaved benevolently anyway--his inclination to do so is only reinforced--and much is to be gained by checking the occasional egoistic impulse.²⁴

Second, it is likely that men pursue egoistic goals as means to a wide variety of more fundamental goals. While individuals differ substantially in their taste for ultimate goals, most probably find wealth and power very useful in the achievement of their diverse goals. Even the man whose ultimate goal is to improve the lives of other men will be more successful if he first acquires a fortune. A millionaire can build more hospitals than a pauper. Wealth and power

are means to the attainment of a wide variety of goals. By definition, the Rational Man pursues the course of action most appropriate to the attainment of his goals, and that will usually include amassing wealth and power.²⁵ His ultimate goals will dictate how he expends his resources and they may also impose constraints on how he acquires them, but a large proportion of the behavior of a Rational Man will probably be designed to acquire wealth and power as necessary instruments to the achievement of his ultimate goals.

Having included two members of a familiar triumvirate, it is important to explain the exclusion of the third, status. The reason is that both wealth and power are means for an individual to obtain a variety of other things he might want. Unlike the others, status is an end in itself more than a means to other ends. Of course, men might also want wealth and power for their own sake, and so much the better for the predictive power of the egoism postulate if they do. But even if they do not they will rationally pursue wealth and power as means to nobler ends. Rational Men would have no such subsidiary motive for pursuing status, so it is likely that fewer will seek it.²⁶

An attractive feature of both defenses of the egoism postulate is that they are immune to the dangers of actors changing their preferences. The first argument suggests

that, so long as there is one egoist in the group, social institutions will be designed as if they were to control a society of egoists. The second argues that wealth and power are means to a wide variety of ultimate goals. An individual might change his preference ordering over the set of ultimate goals, but whatever his new goals wealth and power will still probably be necessary means to their achievement.

NOTES

¹ See, for instance, Gilbert Ryle, A Rational Animal (London: Athlone Press, University of London, 1962) and Jonathan Bennett, Rationality: An Essay Towards an Analysis (London: Routledge and Kegan Paul, 1964).

² Similar definitions of rational behavior are offered by: Talcott Parsons, The Structure of Social Action (Glencoe, Ill.: Free Press, 1937), 58; Anthony Downs, An Economic Theory of Democracy, Chapter 1; and Robert A. Dahl and Charles E. Lindblom, Politics, Economics and Welfare (New York: Harper and Row, 1953), 38-40.

³ David P. Gauthier, Practical Reasoning (Oxford: Clarendon Press, 1963).

⁴ This is to embrace the position of David Hume, A Treatise Human Nature, Book II, Part III, Section III: "Reason is, and ought to be the slave of the passions and can never pretend to any other office than to service and obey them." For Hume, passions dictate ends and the function of reason is to chart the course. Similarly, Lionel Robbins, An Essay on the Nature and Significance of Economic Science (London: Macmillan, 1932), 23, writes, "Economics is entirely neutral between ends."

A familiar linguistic distinction holds that only means can be rational or irrational but that ends can be reasonable or unreasonable. This suggests that, while the choice of ends is immune to criticism on the narrow concept of

rationality used here (and in ordinary language philosophy), that choice might be vulnerable to criticisms using the wider definition of rationality as "exercising reasoning powers."

⁵ There is no problem if the ends are entirely compatible. The choice of means does not require a choice between ends if the means maximally furthering one end also maximally further (or at least are compatible with maximally furthering) all other ends as well. Regrettably, few goals are so compatible.

⁶ I.M.D. Little, A Critique of Welfare Economics, Second Edition (Oxford: Oxford University Press, 1957), 25, argues that "the interpretation of the postulate that 'utility is maximized' is simply that the man must behave in the way in which he said he would behave [in detailing his preference ordering]. Roughly speaking, maximizing utility means telling the truth--or, less paradoxically, being able correctly to predict one's own behavior." John Plamanetz, Democracy and Illusion (London: Longman, 1973), 163-4 discusses "predictable wants" as a precondition for rational behavior.

⁷ Kenneth J. Arrow, Social Choice and Individual Values, Second Edition (New Haven: Yale, 1963), 11-17 defines preference and indifference in terms of an "at least as good as" relationship R . An individual prefers p to q if he thinks p is at least as good as q and that q is not at least as good as p , i.e., pPq implies pRq and not- qRp . Indifference implies that each is at least as good as the other, i.e., pRq and qRp . Georg Henrik von Wright, The Logic of Preference (Edinburgh: The University Press, 1963), 23-5, suggests that, furthermore, pPq implies that state of the world " p and not- q " is preferred to the state "not- p and q ."

⁸ "Not knowing" is analytically distinct from "indifferent," although men are often (but not always) indifferent between unknown commodities. Indifference is no obstacle to choice; since the actor is as happy with one as with the other, he chooses randomly between them.

⁹ Kenneth J. Arrow, Social Choice and Individual Values, Second Edition, 19-21, discusses sympathetically this line of argument. See also Gordon Tullock, "The Irrationality of Intransitivity," Oxford Economic Papers, 16 (1964), 401-406.

¹⁰ Similar arguments on all three points are found in Amartya Sen, "Behaviour and the Concept of Preference," Economica, 40 (1973), 241-59 esp. 241-9.

¹¹ He might, of course, suffer from uncertainty in a less specialized sense of the word and not know which goal would make him "happier" if achieved. But it is clear that economic theories of decision-making under uncertainty would offer him no assistance since they presuppose a fixed set of goals.

¹² This is clearly true when the incompatibility is a contingent and not an analytic fact. If this contingent fact were taken into account in an individual's ordering of goals, he is likely to overlook possibilities of achieving both simultaneously when technology has changed to permit it. When the incompatibility is an analytic truth, it does not really matter whether it is taken into account in ordering goals or ordering means to the goals; but on the chance that he has erred in supposing the incompatibility to be an analytic truth, it might be better for an individual to reflect this incompatibility in his ordering of means.

¹³ That is to say, if the good effects of a single plan are at least as good as and occasionally better than the best effects of every alternative plan and if its ill effects are at least no worse and occasionally better than those of every alternative plan, then that plan is unambiguously better. This is only true, however, if "taking no action" is understood as one of the alternatives under review.

¹⁴ This extends John Rawls, A Theory of Justice (Cambridge: Harvard University Press, 1971), Sections 63 and 64 and David A.J. Richards, A Theory of Reasons for Action (Oxford: Clarendon Press, 1971), 28-9. Richards' account is incomplete because it ignores choices resulting from decisions to trade off partial attainment of one goal for partial attainment of another, and Rawls is simply ambiguous on the point. This discussion corresponds to talk of "conditional" preferences in von Wright, The Logic of Preference and of "effect complexes" in Felix E. Oppenheim, "Rational Choice," Journal of Philosophy, 50 (1953), 341-50. See generally Georg Henrik von Wright, "On So-Called Practical Inference," Acta Sociologica, 15 (1972), 39-53.

The common assertion that "the ends can never justify the means" usually amounts to an objection either to the narrow range of ends an actor is pursuing or else to the

actor's inadequate consideration of the impact of certain means on other ends he would agree are desirable.

¹⁵ Howard Raiffa, Decision Analysis: Introductory Lectures on Choices under Uncertainty (Reading, Mass.: Addison-Wesley, 1968) serves as an excellent introduction.

The expected utility formulation is complicated by the fact that an actor might have a taste for risk-taking as such. The matter is further complicated because a single actor ordinarily does not display a uniform attitude toward risks. Men enjoy taking some risks (eg., betting on a horse race) but display aversion to others (eg., by taking out insurance). Kenneth J. Arrow, Essays in the Theory of Risk-Bearing (Chicago: Markham, 1971), esp. Chapters 1 and 3 offers a plausible explanation: the larger the stake the more averse the actor to taking the risk.

¹⁶ Raiffa, Decision Analysis offers an extended discussion of the decision to purchase further information. While "satisficing" is sometimes (especially in administrative theory) taken to be an alternative to rational behavior, Herbert A. Simon, "A Behavioral Model of Rational Choice," Quarterly Journal of Economics, 69 (1955), 99-118 says nothing of the kind. The interpretation offered by John Rawls, A Theory of Justice, 418 seems perfectly correct.

¹⁷ His distinctions between "conditional" and "unconditional preferences" and the parallel "weak" and "strong indifference" pervade The Logic of Preference. Preferences involving risk are discussed in Section 11.

¹⁸ This amounts to an attack on the "revealed preference" mode of analysis developed by Paul A. Samuelson, Foundations of Economic Analysis (Cambridge: Harvard University Press, 1947) and exemplified by I.M.D. Little, A Critique of Welfare Economics, Second Edition, Chapter 2 and Appendix 2. The essence of the challenge is that there are preferences (preferences for goals) underlying the preferences that are revealed (preferences for means); and that an individual behaves rationally so long as the underlying preferences are consistent and well-ordered. Such a two-tier system of preferences seems to be at least implicit in Kelvin J. Lancaster, "A New Approach to Consumer Theory," Journal of Political Economy, 74 (1966), 132-57. Lancaster suggests defining preferences in terms of characteristics of goods rather than talking of "preferences for goods," and he suggests that this might help explain why margarine is a good substitute for butter but a brick is not.

¹⁹ Philip H. Wicksteed, The Common Sense of Political Economy (London: Macmillan, 1910), Chapter 5. Buchanan and Tullock, The Calculus of Consent, Chapters 3 and 4 discuss the principle in relation to their work. Mancur Olson, The Logic of Collective Action, 64-5 seems to believe his discussion does not depend on this principle, but A.K. Sen and W.G. Runciman, "Games, Justice and the General Will," Mind, 74 (1965), 554-62 should make it clear that it does. Olson is right to argue that any individual's contribution to the well-being of the group would be very small indeed, but he is wrong to suppose that a true altruist (one who is exclusively concerned for the welfare of the group and not at all for his own) would pass up the opportunity to make even an infinitesimal improvement in group welfare.

²⁰ Describing the procedures of economists and game theorists, Thomas C. Schelling writes, "We rely on empirical information about a man's objectives and what alternatives are available to him; but from there on we just imagine ourselves in his position, see how we should proceed if we were he, and conclude that he may go ahead and do just that" ("Strategic Analysis and Social Problems," Social Problems, 12 [1965], 367-79). See also R.D. Luce and Howard Raiffa, Games and Decisions (New York: Wiley, 1957), Chapter 2. The "diplomat" discussed in the text is using the Classical Model discussed in Graham T. Allison, Essence of Decision, Chapter 1. Leroy N. Rieselbach, Congressional Politics (New York: McGraw Hill, 1973) suggests restructuring the theory of U.S. Congressional behavior to make use of the "role orientation" of Roger H. Davidson, The Role of the Congressman (New York: Pegasus, 1969) as evidence of the Congressman's goals.

²¹ Niskanen, Bureaucracy and Representative Government; Downs, An Economic Theory of Democracy, 3-47; Riker, The Theory of Political Coalitions. Wittman and Axelrod criticize Downs and Riker respectively for ignoring a second goal of political parties, influencing policy; and Taylor and Laver demonstrate that the predictive power of Riker's theory is improved with the addition of Axelrod's modification. (See Chapter 1, note 6 for references.) See also John von Neumann and Oscar Morgenstern, The Theory of Games and Economic Behavior, Second Edition (Princeton University Press, 1947), 8-9: "We shall . . . assume that the aim of all participants in the economic system . . . is money, or equivalently a single monetary commodity The individual who attempts to obtain these respective maxima is . . . said to act 'rationally.'"

It might, of course, be useful to trace out the implications of certain goals for behavior even if actors do not embrace those goals. This seems to be Downs' fall back position. But then the theory would no longer be a positive political theory.

²² The classic discussion of bargaining power is Robert A. Dahl, "The Concept of Power," Behavioral Science, 2 (1957), 201-15. Bargaining power is, of course, only one variety of power. Peter Bachrach and Morton S. Baratz, "The Two Faces of Power," American Political Science Review, 56 (1962), 947-52 emphasize power in relation to non-decisions, which is essentially power to control the agenda. Steven Lukes, Power: A Radical Analysis (forthcoming) analyzes power resulting from mobilization of bias.

²³ Clearly, game theorists suppose that an individual has power over other men by virtue of his power over outcomes and the others' evaluation of the outcomes he is capable of producing. Thus, L.S. Shapley and Martin Shubik, "A Method for Evaluating the Distribution of Power in a Committee System," American Political Science Review, 48 (1954), 787-92 figure actors' power on the basis of their ability to change the legislative outcome, enacting or not enacting legislation. See also Brian Barry, "The Application of the 'Economic' Approach to the Analysis of Power and Conflict, and its Limitations," Government and Opposition (forthcoming).

²⁴ David Hume, A Treatise of Human Nature, Book III makes such an argument quite explicitly; here Hume is heavily indebted to Thomas Hobbes, The Leviathan. Of course, there might be something to lose by using sanctions to reinforce natural benevolence. Richard M. Titmuss, The Gift Relationship (London: Allen and Unwin, 1970) argues that offering incentives (and, by extension, threatening sanctions) we introduce base motives which are incompatible with natural benevolence. If Titmuss is correct, natural benevolence has to be comparatively rare for the introduction of sanctions to be advisable.

²⁵ J.D. Mabbott, "Reason and Desire," Philosophy, 28 (1953), 113-23 discusses the rationality of planning so as to achieve as many goals as possible over time. This forms the basis for discussions of planning and "primary goods" in John Rawls, A Theory of Justice, 407-24 and David A.J. Richards, A Theory of Reasons for Action, 40-3. Charles Fried, An Anatomy of Values (Cambridge: Harvard University Press, 1970) expands on Rawls. Robert A. Dahl and Charles E. Lindblom, Politics, Economics and Welfare (New York: Harper, 1953), Chapter 2 make the similar argument that the values of freedom, equality,

security, democracy and progress should be used to evaluate social processes because these values are instrumental to a variety of other goals. Similar conclusions about the instrumental value of freedom, equality and democracy are reached in Part III of this essay, but only after extended discussion.

²⁶ Wealth, status and power seem to be empirically correlated, but the direction of causation seems to run from wealth and power to status. If status is instrumental to a variety of goals and if it exists independently of wealth and power (both of which are essentially empirical questions), then no harm is done including status as a component of self-interest for purposes of the present discussion.

PART II

THE RATIONALITY OF COOPERATION

Introduction

The task of Part II is to demonstrate the strength of the Rational Man model in explaining cooperative behavior. This is done by identifying a frequently neglected class of situations, coordination problems.

The terms "conflict" and "cooperation" refer to the consequences of actors' behavior. Conflict occurs when one individual does something which tends to decrease the probability (or actually to prevent) others obtaining things they want. Cooperation occurs when one man does something which tends to increase the probability (or actually to assure) others obtaining things they want. There are also degrees of conflict and cooperation. The greater the impact of one man's actions on the want satisfaction of others the greater the conflict or cooperation.

The Rational Man model explains conflictive behavior as a response to a "conflict of interest" between actors.¹ A conflict of interest exists whenever the full realization of the goals of one actor is incompatible with the full realization of the goals of another actor. The polar case is the "zero sum game." There actors are working a cross purposes entirely; each man can gain only by inflicting comparable losses on his opposite number.

Existence of a conflict of interests is the only necessary condition for conflictual behavior between Rational

Men, but it is important to emphasize that not every conflict of interests necessarily leads to conflictual behavior. Conflicts of interest can be either large (eg., each man gains **twice** as much as the other loses) or small (eg., each gains half as much as the other loses). They might be over issues where everyone's stakes are high (everyone has much to win or lose) or low (winning or losing matters little). Three conditions are jointly sufficient for the rationality of conflictual behavior: there must be a large conflict of interests over a high stakes issue. A fight involves some expenditure of resources, so where stakes **are** low or the conflict of interests is small Rational Men will engage only in a minor conflict or none at all. The larger the conflict of interests the larger the conflict predicted by the Rational Man model.²

This analysis of the logic of conflict implies a **parallel** analysis of the logic of cooperation. Rational Men will cooperate only when their interests coincide, that is, when what is most in one man's interest to do is also what is most in another's interest that he should do.³ But coincidence of interests does not guarantee cooperative behavior any more than conflicts of interests guarantee conflictual behavior. The coincidence might be strong (one person's getting what he wants greatly assists another in getting what he wants) or weak (one man's success is only marginally helpful to another); and individuals might have high or low

stakes in the issue. If there is a weak coincidence of interests on a low stakes issue, Rational Men would not be expected to respond to a coincidence of interests with cooperative behavior. The stronger the coincidence of interests and the higher the stakes the greater the cooperative behavior predicted by the Rational Man model.

More than shared goals are required if Rational Men are to cooperate. Several men might share the goal that a certain state of the world be produced but it might not be in the interest of any of them to contribute toward that end. This is the case with respect to the production of a pure public good, one which must be available to everyone if it is available to anyone. The interests of the Rational Man consist in the realization of his goals at the least cost. Thus, he is tempted to be a "free rider" and allow others to bear the costs of producing public goods which, if produced, he will enjoy whether or not he contributes.⁴ A Rational Man contributes to the production of a public good only if he supposes that his contributions will be decisive, that it will make the difference between the good being provided and it not being provided. If others will produce the good for him without his contribution he need not contribute; and if the good cannot be provided even with his contribution there is no reason for him to waste resources on a contribution.

These conditions for the rationality of cooperation

seem to be highly restrictive. One is inclined to suppose that few cases will fit this pattern and, consequently, the Rational Man model will be capable of predicting and explaining only a very few instances of cooperative behavior. This result, in turn, would support the common intuition discussed in Chapter 1 that what makes the model so adept at explaining conflictual behavior will also make it virtually incapable of explaining cooperation.

At first glance, the conditions for rational cooperation might seem quite restrictive and infrequently satisfied in social life. Situations are rarely structured in such a way that there is perfect coincidence of interests--every improvement for one man also being an improvement for someone else--and weaker conditions that would also lead to cooperation (eg., no one loses from any possible gain of anyone else) are nearly as rarely satisfied. It is even more unusual for each individual to have reasons for believing that his contribution toward furthering shared interests will be decisive.

Chapters 3 and 4, however, discuss a large class of cases known as "coordination problems" in which both of these conditions are satisfied. They are satisfied not for reasons pertaining to the structure of the situation but rather because of certain strategic considerations. A coincidence of interests exists. Everyone has an interest in everyone (or at least everyone else) coordinating their behavior and

producing a coordinated solution which is better for everyone than the expected consequences of continuing to act independently. In some coordination problems, each actor's contribution is naturally decisive. Where it is not, the coordinating scheme is structured in such a way that no one gains from the coordination of others unless he also adheres to the coordinating scheme.

NOTES

¹ Robert Axelrod, Conflict of Interest: A Theory of Divergent Goals with Applications to Politics (Chicago: Markham, 1970).

² Kenneth E. Boulding, "The Economics of Human Conflict," Collected Papers (Boulder: Colorado Associated University Press, 1971), Volume II, 325-44 includes these considerations in his "coefficient of conflict."

³ Kenneth E. Boulding, Conflict and Defense (New York: Harper, 1962), Chapter 3 and John C. Harsanyi, "Game Theory and the Analysis of International Conflict," International Politics and Foreign Policy, ed. J.N. Rosenau (New York: Free Press, 1969), 370-79 discuss both conflict and cooperation from within the Rational Man framework. "Shared interests" is also the key to the pluralist theory of group formation. See Arthur F. Bentley, The Process of Government (Chicago: University of Chicago Press, 1908); David B. Truman, The Governmental Process (New York: Knopf, 1953); and James D. Mooney, The Principles of Organization (New York: Harper, 1947). Gerald Marwell and David R. Schmitt, "Some Notes on the Concept and Experimental Study of Cooperation," Journal for the Theory of Social Behaviour, 1 (1971), 153-64 find a similar usage of the concept in their review of the sociological literature.

⁴ Mancur Olson, The Logic of Collective Action bases his critique of the pluralist theory of groups on this point.

CHAPTER 3: COORDINATION PROBLEMS

This chapter concerns the conditions under which Rational Men would endeavor to coordinate their behavior and what steps they need to take in order to do so. The first section discusses necessary and sufficient conditions for the existence of a coordination problem involving two actors. A coordination problem exists if and only if both actors involved prefer joint to independent decision-making. The potential advantage of joint decisions is that they enable an individual to be reasonably certain of what the other will do; making decisions independently he can only guess what the other will do, and mistaken guesses can cause him to make expensive errors in choosing his own course of action. Two different causes of coordination problems are identified in Section 3-2. Solving a coordination problem always requires communication, be it direct or indirect, and Section 3-3 specifies conditions under which each of two other steps--enforcement and arbitration--will also be necessary. Section 3-4 discusses how the simple two-person coordination problem changes with the addition of more actors. The advantages of using rules to coordinate behavior are discussed in Section 3-5. Mechanisms designed to facilitate coordination also create possibilities for exploitation, and these are explored in Section 3-6.

3-1: The Nature of Coordination Problems

Independent decision-making is said to occur whenever decisions are made by actors in isolation. Of course, the payoff of one actor is often partially determined by the actions of others, and in such cases what he chooses to do naturally reflects his expectations about what relevant others will do. This is perfectly consistent with independent decision-making provided there was no interaction between the decision maker and the other actors that in any way affected his decision. Joint decision-making is said to occur when all actors participate in determining the decisions of each actor. It implies that there was interaction between all the actors prior to the decisions and that this interaction shaped the decision of each actor.

The paradigm of independent decision-making is playing a game against nature. An actor must take Mother Nature's actions as given and make the best response he can to them. It is impossible to make a joint decision with nature; no man can do anything to alter what would occur naturally. (To the extent he can--by loading the dice, for example--he is not, strictly speaking, playing a game against nature.) The paradigm of joint decision-making is a Quaker meeting, with the Committee of the Whole determining the actions of every participant.¹

A "coordination problem" is defined as existing whenever it is rational for all agents involved to prefer joint

to independent decision-making. An agent is "involved" if his well being will be affected by the decisions of others. This situation is called a coordination problem because aspiration of every Rational Man is to find a way of coordinating his decisions with those of everyone else involved. Of course, not all joint decision-making succeeds in this task, but the Rational Man favors it in hopes that it will.

Mutual involvement of actors is a necessary condition for the existence of a coordination problem. It is not, however, a sufficient condition; that is, a coordination problem does not necessarily exist whenever all actors are affected by each other's decisions. Each actor might independently do precisely what everyone else would like him to do. Sometimes men gain from the confusion accompanying independent decision-making and would prefer to keep the independent decisional processes. A second necessary condition for the existence of a coordination problem, then, is that independent decision-making must involve risks of disagreeable outcomes for everyone involved.

These necessary conditions are jointly sufficient for the existence of a coordination problem only if these risks are sufficiently serious and the rewards of coordination are sufficiently alluring. In discussing what is involved in "sufficiency" in this context, some simple notation will prove convenient. Assume two actors, player 1 and player 2, are involved. (Coordination problems involving more than two

actors are discussed in Section 3-4.) Player 1 can select his action from the set $\{a_1, a_2, a_3, \dots, a_m\}$ and player 2 can select his action from the set $\{\beta_1, \beta_2, \beta_3, \dots, \beta_n\}$. $U_1(a_1, \beta_1)$ represents the first player's reward from doing a_1 given the second player's choice of action β_1 ; similarly, $U_2(a_1, \beta_1)$ represents the reward to player 2 from doing β_1 given the first player's choice of action a_1 .

Each player, being rational, chooses to do whatever will maximize his reward. If one player knows what the other player will do, he decides what he will do by simply comparing his rewards from each of his possible actions given the known action of the other player. Thus, if player 1 knows that player 2 will do β_1 , he decides what he will do by comparing $U_1(a_1, \beta_1)$, $U_1(a_2, \beta_1)$, $U_1(a_3, \beta_1)$, ... and $U_1(a_m, \beta_1)$. Usually, however, players cannot be certain of what each other will do. Instead a player can only know (or guess) the relative probabilities of the other performing each of the actions available to him. In such instances, a player decides what to do by calculating his expected utility from doing each action available to him. $EU_1(a_1)$ represents the reward player 1 expects from action a_1 . What a player actually gets from doing something depends, of course, on what the other does. But what he antecedently expects to gain from doing it is the sum of the rewards he would actually obtain if the other player did a certain thing, each discounted by the improbability that the other

will do that thing. That is, player 1's expected gain from a_1 is

$$EU_1(a_1) = p_{\beta_1} U_1(a_1, \beta_1) + p_{\beta_2} U_1(a_1, \beta_2) + \dots + p_{\beta_n} U_1(a_1, \beta_n)$$
$$EU_1(a_1) = \sum_{i=1}^n p_{\beta_i} U_1(a_1, \beta_i)$$

where p_{β_i} represents the probability of player 2 doing β_i .² Let a_e be the course of action that maximizes this sum for player 1 when players 1 and 2 are making decisions independently. Player 2 evaluates his alternative actions according to a similar formula. The expected gain to player 2 from doing β_1 , for example, is

$$EU_2(\beta_1) = \sum_{i=1}^m p_{\alpha_i} U_2(\alpha_i, \beta_1) .$$

Let β_f be the course of action that maximizes this sum for player 2 under conditions of independent decision-making.³

A coordination problem exists whenever it is rational for both player 1 and player 2 to prefer joint (i.e., coordinated) to independent decision-making. Such a preference can be rational only if there exists some "coordinated solution," defined as a combination of actions available to players 1 and 2 such that the guaranteed joint pursuit of this combination would pay each player more than he expects to gain acting independently. That is to say, a coordinated solution (α_c, β_c) exists if and only if

$$U_1(\alpha_c, \beta_c) > EU_1(\alpha_e) \text{ and } U_2(\alpha_c, \beta_c) > EU_2(\beta_f)$$

There may, of course, be one or several such coordinated solutions to any given coordination problem.

The advantage of perfect coordination over independent decision-making is that individuals can thereby eliminate the risks (i.e., expected disutility) of disagreeable outcomes by reducing their probability to zero and guarantee the production of some outcome (the coordinated solution) that promises both players greater gains than they expect from acting independently. Coordination is often a mixed blessing. Guaranteeing that the coordinated solution will be produced eliminates the possibility of anything else happening, and this often precludes some good outcomes for each player as well as some bad ones. But so long as an individual's gains from the coordinated solution outweigh his expected gains from acting independently it is rational for him to prefer coordination.

In practice, coordination schemes rarely operate perfectly. They increase the probability of producing a coordinated solution but they do not guarantee it (increase the probability to 1.0). Coordination need not be perfect to be rationally preferred to independent decision-making. All that is required is that, with coordination, the expected payoff for each player is higher than the expected payoff without coordination. Imperfect coordination, like perfect coordination, gains such advantage as it has over independent

decision-making by decreasing the probability of undesirable outcomes for each player and increasing the probability of some (but not necessarily all) desirable outcomes, especially the coordinated solution.⁴

3-2: Causes of Coordination Problems

This section analyzes the causes of coordination problems. Two fundamentally different causes are identified. Any particular coordination problem might result from either one or a combination of both of these causes.

In all coordination problems the payoff to each player is partially determined by the other's actions (the condition of mutual involvement). It is convenient to represent such situations as games summarized in payoff matrices. The sample matrix below shows a game with two players, Albert and Bernard, in which Albert can do either α_1 or α_2 and Bernard can do either β_1 or β_2 .

Matrix 3-1:

		<u>Bernard</u>	
		β_1	β_2
<u>Albert</u>	α_1	(1,2)	(3,4)
	α_2	(5,6)	(7,8)

Payoffs are read from the matrix as follows: if Albert does α_1 and Bernard does β_1 , then Albert gains 1 and Bernard gains 2; if Albert does α_1 and Bernard β_2 , then Albert gains 3 and

Bernard 4; etc. Traditionally, game theory is primarily concerned with the analysis of independent decision-making, which is operationalized in the requirement that players choose their actions simultaneously and without prior communication. These conditions can be and have occasionally been relaxed in order to explore the advantages of coordination.⁵

The notion of dominance of strategies is the key to explaining the causes of coordination problems. In the game just discussed, strategy α_2 dominates strategy α_1 for Albert at the point picked out by Bernard doing β_1 if Albert's gain from doing α_2 when Bernard does β_1 exceeds Albert's gain from doing α_1 when Bernard does β_1 . Using the notation of Section 3-1 and letting Albert be player 1 and Bernard player 2, this can be expressed $U_1(\alpha_2, \beta_1) > U_1(\alpha_1, \beta_1)$. Strategy α_2 is strictly dominant for Albert if it pays him at least as much as every other strategy (in this case α_1 is his only option) at every point and more than each other strategy at one or more points. A strictly dominant strategy might be dominant at every point, but this is not necessarily true. All the definition requires is that it be dominant at one point and at least undominated at all other points. A strategy can be dominant at one point without being strictly dominant--some other strategy might be dominant at another point.

The various strategic situations that might face two

players with respect to a coordinated solution are displayed in Figure 3-1 with games illustrating each entered in the appropriate cells. In each matrix, the coordinated solution is underlined in red. A verbal description of the "named" games in Figure 3-1 follows that figure.

Under the conditions of independent decision-making, the actions of Rational Men with a strictly dominant strategy are certain. It is clear from the definition of strict dominance that rational players will pursue such a strategy where they can. (The strictly dominant strategy always pays at least as much as any other strategy and sometimes pays more.) The actions of a player without a strictly dominant strategy are much less predictable. His choice of actions will largely reflect his expectation of what the other player will do.

Coordination problems exist because independent decision-making involves the risk of disagreeable outcomes. Figure 3-1 helps to emphasize that there might be two fundamentally different types of causes of those disagreeable outcomes. At the top left of Figure 3-1, neither player has a strictly dominant strategy. Since neither can be certain what the other will do, neither can be sure how he should behave in reaction. Disagreeable outcomes are likely to be the inadvertent consequences of each player's behavior in such confused circumstances. Moving down and towards the

Figure 3-1, continued

Caption

Description of "named" games.

Chicken: This is a game played by teenagers in the U.S., usually with their fathers' automobiles. Both players drive towards one another accelerating all the while. The object of the game is to test the mettle of the players. Whoever swerves to avoid a collision is identified as a "chicken." If both continue driving straight towards the other, neither is a "chicken" but both realize a loss even more serious than loss of face: their father's car is damaged and they might themselves be physically injured. If both swerve the game is a draw, and neither is more "chicken" than the other.

Prisoner's Dilemma: Two partners-in-crime have been arrested. The prosecutor has sufficient evidence to convict both of them on a minor charge; he also suspects they have committed a serious offense, but he does not have enough evidence to convict them of it unless one confesses. The prosecutor approaches each prisoner with a deal and he tells each he is offering the same deal to his partner. The deal is this: (1) conviction on the minor charge is certain; (2) if the prisoner turns state's witness implicating his partner in the serious crime he will get a lighter sentence on the minor charge and will not himself be prosecuted on the major charge; (3) if his partner implicates him, the prisoner will receive harsh treatment on both charges; (4) if both confess both will receive lenient treatment on both charges. Each prisoner is better off confessing no matter what his partner does: if his partner would confess anyway, he gains lenient treatment by confessing also; if his partner would not confess₆ anyway, he receives a lighter sentence on the minor charge.

right in Figure 3-1, disagreeable outcomes are decreasingly accidental and increasingly inexorable consequences of the combination of strategic options facing players. In the Chicken Game, for example, if either driver feels certain that the other will swerve he will himself continue driving straight ahead in hopes of winning the game. The disastrous outcome, the collision, is still in some sense accidental (it results from miscalculation of what the other will do), but there is less element of accident here than in the top left cell. In the cell at the bottom right of Figure 3-1, the disagreeable outcome is not at all accidental. Both prisoners confess in the Prisoner's Dilemma situation because confessing is each one's strictly dominant strategy. Even if he knows that his partner will not confess, a prisoner is still better off confessing himself. The disagreeable outcome of dual confessions is more than a risk--it is a certainty.

3-3: Solving Coordination Problems

Communication among the involved actors is always required to solve a coordination problem. At the very least, everyone must be informed that everyone else regards the situation as a coordination problem (he may misjudge their preferences and not realize this until he is told) and that everyone else desires joint pursuit of a coordinated solution. Communication need not be direct; tacit communication can

serve the same function. One especially important method of indirect communication involves one actor using his choice of strategies in one playing of the game to signal the other for the next playing.⁷ In the game in the top left cell in Figure 3-1, for example, Albert might play the bottom row as a signal to Bernard that next time he should play the column furthest to the right so they would both end up gaining 2.

There are two further steps either or both of which might be required in solving coordination problems. These are enforcement and arbitration. This section discusses what is involved in each of these and identifies conditions under which each is required.

Enforcement entails the modification of the payoffs of a game in such a way as to remove the temptation for a player to defect from the coordinating scheme which is to be jointly pursued. Enforcement is required if and only if temptations exist. Coordinating schemes are often self-enforcing: no one defects because defecting pays both less than they would gain from adhering. Coordinating schemes, then, need to be enforced only against a player for whom the coordinated solution is dominated and who would, therefore, defect from the coordinating scheme if he were certain the other player would adhere. In the more formal language of Section 3-1, player 1 is tempted if there exists some α_t such that $U_1(\alpha_t, \beta_c) > U_1(\alpha_c, \beta_c)$, where (α_c, β_c) is the chosen coordinated solution (i.e., the

outcome of both players adhering to the coordinating scheme).

Coordinating schemes can be enforced either by imposing sanctions on those who defect or by offering incentives to those who adhere. The impact of either on the Rational Man is the same. Sanctions make adhering more attractive by making the alternative, defecting, more costly; incentives achieve the same result by actually increasing the rewards of adherence. Thus, sanctions and incentives are, in principle, interchangeable.

These two enforcement techniques can be used independently or they can be combined into a carrot-and-stick policy. A system of penalties and incentives is sufficient to enforce the coordinated solution (α_c, β_c) if and only if they are adequate to overcome the temptation for players to defect from the coordinating scheme. Suppose, for example, that α_t is the most tempting (i.e., dominant) strategy for player 1 at the point picked out by player 2 doing β_c . That is, $U_1(\alpha_t, \beta_c) > U_1(\alpha_i, \beta_c)$ for every $\alpha_i \in (\alpha_1, \alpha_2, \alpha_3, \dots, \alpha_m)$, $\alpha_i \neq \alpha_t$. Let $U_1(o)$ represent the gain to player 1 from incentives offered for adhering to the coordinating scheme; and let $U_1(p)$ represent the loss to player 1 from the penalties threatened for defecting. (Note that $U_1(p)$ is a loss and will therefore be a negative number.) The combination of threats and offers is adequate to enforce the coordinating scheme if and only if

$$U_1(\alpha_t, \beta_c) + U_1(p) \leq U_1(\alpha_c, \beta_c) + U_1(o).$$

Adequacy of enforcement schemes relying exclusively on either sanctions or incentives can be treated as a special case of the above. Sanctions alone will suffice if and only if they are sufficiently distasteful that the above inequality holds even when $U_1(o) = 0$. Incentives alone will suffice if and only if they are so attractive that the above inequality holds when $U_1(p) = 0$.

One especially important way of combining offers and threats is the conditional promise. "I will if and only if you will" arrangements display characteristics of both sanctions and incentives. A player offers to do something the other desires if the other does likewise, and he threatens not to do it if the other defaults.

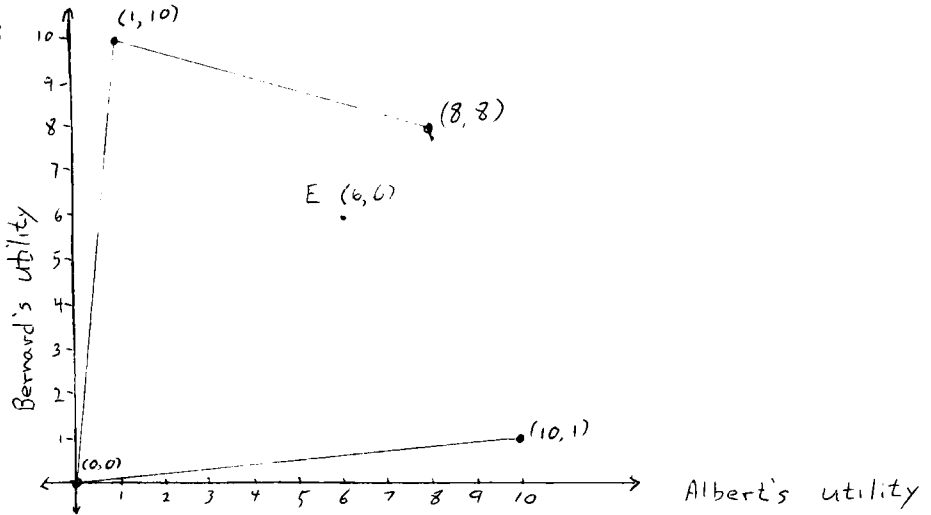
Arbitration involves the intervention of an intermediary between those involved in the coordination problem. The arbiter performs two functions: (1) he selects a coordinated solution to be pursued jointly by parties involved in the coordination problem; and (2) he enforces that choice.⁸

Arbitration is necessitated by a conflict of interest between players over the selection from among several possible coordinated solutions. The amount of conflict of interest can be measured as follows.⁹ Plot payoffs from a matrix as coordinates on a graph where each player's utility is measured along a different axis. For example, Matrix 3-2 is mapped in Figure 3-2. Let point E correspond to the utility that players expect from acting independently, and let that point

Matrix 3-2

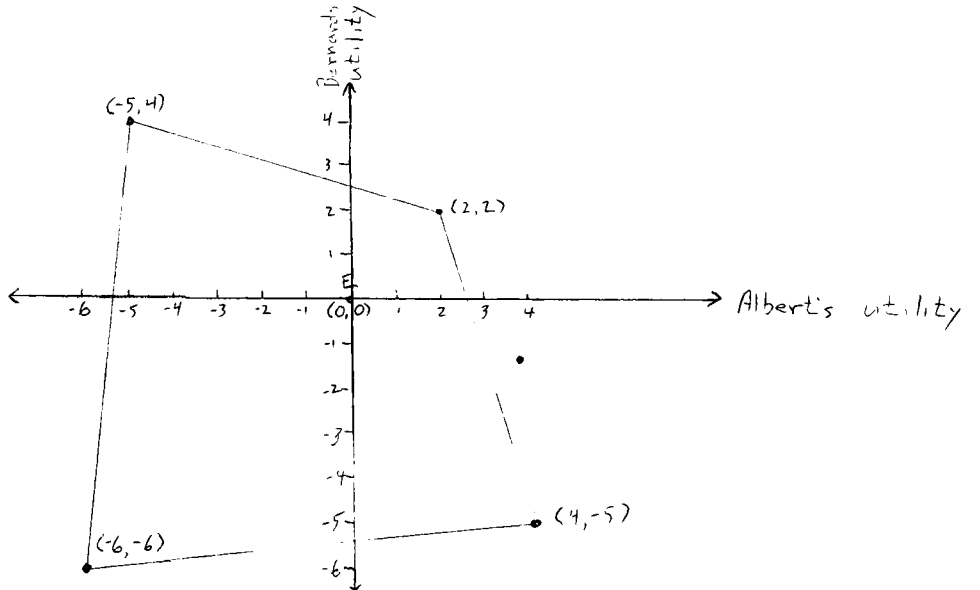
		<u>Bernard</u>				
		β_1	β_2			
<u>Albert</u>	a_1	[(8,8)]	(1,10)]
	a_2	[(10,1)]	(0,0)]

Figure 3-2:



be the origin of a new "normalized" coordinate scheme as in Figure 3-3.

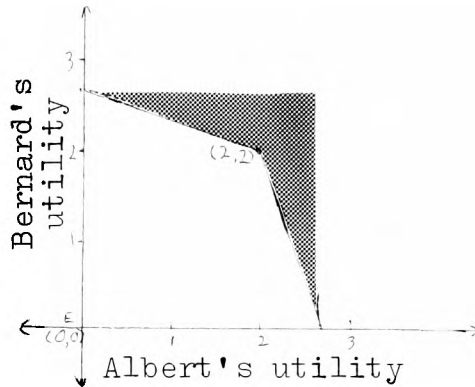
Figure 3-3:



All points north and east of the new origin (point E) are possible coordinated solutions. The further east the solution

the better Albert likes it; the further north the solution the better Bernard likes it. The conflict of interest between Albert and Bernard over the choice of a coordinated solution is measured as the area of the shaded portion of Figure 3-4.

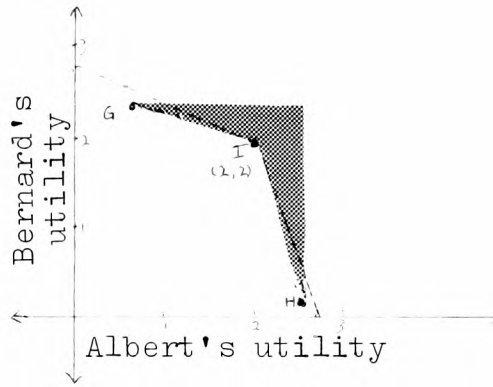
Figure 3-4:



Note that this analysis assumes that the thing being distributed is infinitely divisible. So long as this is true, players can arrange to share the goods in a way corresponding to any point inside the closed figure marked out by the points read off the payoff matrix; and hence any point north and east of E is a possible coordinated solution. If, however, the goods can only be distributed in a certain finite number of ways then only certain of the points inside that closed figure correspond to utilities of possible distributions.¹⁰ That means that only some and not all points north and east of E are possible and, therefore, there is a limited list of candidates for the coordinated solution. Suppose, for example, that given the possible divisions of the goods the only possible payoff combinations northeast of E are points G, H and I.

These being the only possible coordinated solutions, the conflict of interest is the amount shown by the shaded region of Figure 3-5.

Figure 3-5:



The amount of conflict of interest between two players over a choice of coordinated solution can range between zero and infinity. Coordination problems might involve no conflict of interest for either of two reasons. First, there may be only one possible coordinated solution. That is to say, there may be only one possible division of the goods that would result in greater utility to both players than they expect to get acting independently. For example, in Figure 3-5 point I might be the only point which is possible north and east of point E. Second, both players might be indifferent between all possible coordinated solutions. For example, there might be several different combinations of actions that reward Bernard 2 and Albert 1, so neither cares which particular combination of actions is chosen as the coordinated solution.

The greater the conflict of interest over the choice of a coordinated solution the greater the need for arbitration. The first function of an arbiter is to specify a coordinated solution to be jointly pursued. The greater the conflict of interest the more difficulty players will experience in deciding between themselves which coordinated solution they will jointly pursue. The larger the conflict the more each player is inclined to demand a coordinated solution the other will not permit and the less each is inclined to accede to the demands of the other player. Of course, the consequence of non-agreement is reversion to independent decision-making; and it is clear from the definition of a coordination problem that, no matter how great the conflict of interests over choice of coordinated solutions, any one of the possible coordinated solutions is better for both players than the expected results of independent decision-making. But while it is in the interests of each player to agree to some coordinated solution, Rational Men also have a substantial interest in seeming to be intransigent when there is a large conflict of interests over the choice of coordinated solutions, and there is a very real risk of strategic errors resulting in non-agreement in such situations. Bargainers might not realize when to cease posturing and compromise, with non-agreement as the unintended result. Even if players do reach a compromise agreement, it

will come only after protracted bargaining. The larger the conflict of interest the longer the expected bargaining period, and the longer the bargaining period the greater the probable costs of bargaining. Employing an arbiter guarantees that some coordinated solution will be chosen and that the choice will be made relatively quickly. The greater the conflict of interest over the choice of coordinated solutions the greater the advantages of arbitration over the bargaining process on both counts.¹¹

The need for enforcement of the arbitrated selection also increases with increasing conflict of interest over the choice of coordinated solutions. The greater the conflict of interest the greater the motive of one or both players to defect from the existing coordinating scheme in order to force renegotiation of the choice of coordinated solutions. In the course of renegotiation a player can renew his demand for a coordinated solution more favourable to himself. The greater the conflict of interest over the choice of coordinated solution the greater the probable distance between each player's most preferred solution and the chosen solution, so the greater the probable incentives for each player to force a renegotiation.¹² Thus, the greater the conflict of interest the greater the likelihood of strategic defections and hence the greater the need for the arbitrated coordinating scheme to be enforced.

An arbitrated solution can be enforced either through sanctions or offers. There is, however, no way to calculate

precisely what amount of enforcement is necessary. Players who defect from a coordinating scheme for these reasons are willing to take a loss in the present game in order to increase their gains from the next several playings of the game. For enforcement of the existing scheme to be adequate to prevent this, it must increase their losses from defecting (or increase their gains from adhering) in each game by more than they expect to gain back from a renegotiated scheme over the next several games. But to compute how much that is, one must know (1) how much better a player expects the renegotiated solution to be for him and (2) how many games he expects it to last before another renegotiation. For the outside observer, these are usually imponderables.

What steps are required to solve a coordination problem, then, depends on two things: whether the coordinated solution is dominated or undominated and the degree of conflict of interest between players over the choice of coordinated solutions. Figure 3-6 displays the possible combinations of these two factors in a two-person game and provides sample games illustrating each type of situation. (Descriptions of named games follow Figure 3-6.) Figure 3-7 summarizes what sorts of steps are required to solve each type of coordination problem.

The further down on Figure 3-6 the more people against whom the coordinated solution must be enforced. The further to the right on Figure 3-6 the greater the need for arbitra-

Figure 3-6

CONFLICT OF INTEREST BETWEEN PLAYERS OVER
CHOICE OF COORDINATED SOLUTION

	None		Some
Coordinated solution is unique	<p>Coordinated solution is unique</p> <p style="text-align: center;">Bernard</p> $\begin{bmatrix} (10,0) & (0,0) & (0,0) \\ (0,0) & (0,10) & (0,0) \\ (0,0) & (0,0) & (2,2) \end{bmatrix}$ <p style="text-align: center;">Albert</p>	<p>Both players are indifferent between all possible coordinated solutions</p> <p style="text-align: center;">Telephone</p> <p style="text-align: center;">Bernard</p> $\begin{bmatrix} (1,2) & (0,0) \\ (0,0) & (1,2) \end{bmatrix}$ <p style="text-align: center;">Albert</p>	<p>War of the Sexes</p> <p style="text-align: center;">Bernard</p> $\begin{bmatrix} (1,2) & (0,0) \\ (0,0) & (2,1) \end{bmatrix}$ <p style="text-align: center;">Alice</p>
Coordinated solution is dominated for both players	<p style="text-align: center;">Bernard</p> $\begin{bmatrix} (0,1) & (13,0) \\ (1,0) & (12,12) \end{bmatrix}$ <p style="text-align: center;">Albert</p>	<p style="text-align: center;">Bernard</p> $\begin{bmatrix} (9,10) & (0,0) & (11,0) \\ (11,0) & (0,0) & (0,0) \\ (0,0) & (0,0) & (9,10) \end{bmatrix}$ <p style="text-align: center;">Albert</p>	<p style="text-align: center;">Bernard</p> $\begin{bmatrix} (10,11) & (0,0) & (12,0) \\ (12,0) & (0,0) & (0,0) \\ (0,0) & (0,0) & (11,10) \end{bmatrix}$ <p style="text-align: center;">Albert</p>
Coordinated solution is dominated for both players	<p style="text-align: center;">Chicken</p> <p style="text-align: center;">Bernard</p> $\begin{bmatrix} (0,0) & (13,1) \\ (1,13) & (12,12) \end{bmatrix}$ <p style="text-align: center;">Albert (also Prisoner's Dilemma)</p>	<p style="text-align: center;">Bernard</p> $\begin{bmatrix} (9,10) & (0,11) & (11,0) \\ (11,0) & (0,0) & (0,0) \\ (0,11) & (0,0) & (9,10) \end{bmatrix}$ <p style="text-align: center;">Albert</p>	<p style="text-align: center;">Bernard</p> $\begin{bmatrix} (10,11) & (0,12) & (12,0) \\ (12,0) & (0,0) & (0,0) \\ (0,12) & (0,0) & (11,10) \end{bmatrix}$ <p style="text-align: center;">Albert</p>

Figure 3-6 (continued)

Coordinated solutions underlined in red.

Descriptions of named games:

Chicken: See Figure 3-1.

Prisoner's Dilemma: See Figure 3-1.

Telephone Game: The Telephone Company installs equipment which automatically terminates connections between local callers after three minutes. To continue a conversation, one party must dial the other's telephone number all over again just as if he were placing a new call. If the two simultaneously attempt to redial, the connection will not be renewed; nor will it be renewed if neither attempts to redial. One must wait while the other redials. This game is described as it would be played in the U.S. where local telephone calls are free, so neither party cares whether he redials or waits.

War of the Sexes: A husband and wife are attempting to plan their evening entertainment. They can attend either a boxing match or a ballet. The wife would rather they do to the ballet, and the husband would rather they go to the boxing match. What matters more to both is that they do something together. The husband would not enjoy the boxing match without his wife's company and the wife would not enjoy the ballet without her husband's company.¹³

Figure 3-7: Required steps in solving coordination problem.
conflict of interest between players over choice of coordinated solution

	none	some	→ ∞
	coord.sol. is unique	both players indiff.between all coord.sols.	
coord.sol. undominated for both players	Communi- cation	Communication Arbitration (trivial)	Communication Arbitration
coord.sol. dominated for one player	Communi- cation Enforcement	Communication Enforcement Arbitration (trivial)	Communication Enforcement Arbitration
coord.sol. dominated for both players	Communi- cation Enforcement	Communication Enforcement Arbitration (trivial)	Communication Enforcement Arbitration

tion. As Figure 3-7 indicates, there is no need for arbitration in Column 1 of Figure 3-6. Arbitration of a rather trivial sort is required in Column 2 of Figure 3-6. Actually, all that is required is someone (an *intermediary* or one of the players) to specify which of several equally good coordinated solutions is to be pursued jointly. This is a trivial case of arbitration because no one cares which solution is specified and there is no danger of anyone defecting from the coordinating scheme in an effort to force renegotiation of the selection. This removes the need for enforcement in connection with the arbitration process but, of course, it does not eliminate all temptations to defect and there might still be a need for enforcement as in Column 2, Rows 2 and 3 of Figure 3-6.

Rational Men are likely to insist on attaching sanctions to defecting from the coordinating scheme even where such enforcement measures seem unnecessary. In such cases, sanctions function as a form of costless insurance against defection. If the coordinated solution really is undominated for Albert, then Albert has nothing to lose from penalizing defectors; he would not have defected anyway. But those sanctions would protect Albert against the danger of Bernard defecting. There is always the chance that Bernard has been misrepresenting his preferences and, contrary to his protestations, the coordinated solution really is dominated for him. In the absence of sanctions, Bernard would have defected from the coordinating scheme to Albert's dis-

advantage. Apparently unnecessary penalties attached to defections protect players against this sort of danger.

3-4: Coordinating Coalitions

To this point, only two person coordination problems have been considered. In this Section, the notion of a coordination problem for three individuals is discussed. Increasing the number of participants in a coordination problem has effects both on the causes of the coordination problem and on the steps required to solve it.

A coordination problem is defined to exist for three actors whenever it is rational for each of the three to prefer joint to independent decision-making. In order to specify necessary and sufficient conditions for the rationality of this preference, let there be players 1 and 2 with the characteristics attributed to them in Section 3-1. In addition, let there be a player 3 with a choice of doing anything in the set $\{\gamma_1, \gamma_2, \gamma_3, \dots, \gamma_0\}$. The gains he expects from independently pursuing each of these strategies are calculated according to the formula

.

$$EU_3(\gamma_1) = p_{\alpha_1} p_{\beta_1} U_3(\alpha_1, \beta_1, \gamma_1) + p_{\alpha_1} p_{\beta_2} U_3(\alpha_1, \beta_2, \gamma_1) + \dots + p_{\alpha_m} p_{\beta_n} U_3(\alpha_m, \beta_n, \gamma_1)$$

or, in other words,

$$EU_3(\gamma_1) = \sum_{i=1}^m \sum_{j=1}^n p_{\alpha_i} p_{\beta_j} U_3(\alpha_i, \beta_j, \gamma_1)$$

Let γ_g be the course of action of player 3 which maximizes this sum.

A coordination problem involving players 1, 2 and 3 exists if there exists some coordinated solution $(\alpha_c, \beta_c, \gamma_c)$ such that

$$U_1(\alpha_c, \beta_c, \gamma_c) > EU_1(\alpha_e)$$

$$U_2(\alpha_c, \beta_c, \gamma_c) > EU_2(\beta_f)$$

$$U_3(\alpha_c, \beta_c, \gamma_c) > EU_3(\gamma_g)$$

$$U_1(\alpha_c, \beta_c, \gamma_c) > U_1(\alpha_c, \beta_c, \gamma_k)$$

$$U_1(\alpha_c, \beta_c, \gamma_c) > U_1(\alpha_c, \beta_j, \gamma_c)$$

$$U_2(\alpha_c, \beta_c, \gamma_c) > U_2(\alpha_c, \beta_c, \gamma_k)$$

$$U_2(\alpha_c, \beta_c, \gamma_c) > U_2(\alpha_i, \beta_c, \gamma_c)$$

$$U_3(\alpha_c, \beta_c, \gamma_c) > U_3(\alpha_c, \beta_j, \gamma_c)$$

$$U_3(\alpha_c, \beta_c, \gamma_c) > U_3(\alpha_i, \beta_c, \gamma_c)$$

for every $\alpha_i \in \{\alpha_1, \alpha_2, \alpha_3, \dots, \alpha_m\}$, $\alpha_i \neq \alpha_c$
 and every $\beta_j \in \{\beta_1, \beta_2, \beta_3, \dots, \beta_n\}$, $\beta_j \neq \beta_c$
 and every $\gamma_k \in \{\gamma_1, \gamma_2, \gamma_3, \dots, \gamma_0\}$, $\gamma_k \neq \gamma_c$.

The first series of equations guarantees that each actor regards the situation as a coordination problem. These equations require that each actor gains more if all three adhere to the coordinating scheme than he expects to

gain acting independently. The second series of equations guarantees that each of the three actors regards both of the others as essential to the coordinating coalition of players 1, 2 and 3. These equations require that each actor loses if either of the other two defects from the coordinating scheme.

Coordinating coalitions are quite unusual sorts of coalitions. Adding another member to a coordinating coalition increases the gains to all the old coalition partners. (In the second series of equations immediately above, player 1 gains more from $(\alpha_c, \beta_c, \gamma_c)$ than $(\alpha_c, \beta_c, \gamma_k)$ and player 2 gains more from $(\alpha_c, \beta_c, \gamma_c)$ than $(\alpha_c, \beta_c, \gamma_k)$ showing that both benefit from the addition of player 3 to the coordinating coalition.) Thus, everyone agrees that the bigger a coordinating coalition the better it is. This is in stark contrast to the principles governing the size of more ordinary types of coalitions, such as parliamentary coalitions. There coalition members divide a relatively fixed total amount of goods, so the more numerous the coalition the smaller the share of goods going to each member. Hence, excess members will be purged from a parliamentary coalition until the coalition is just large enough to win (i.e., is the minimal winning coalition), subject to certain ideological constraints. Parliamentary coalitions are, by their nature, exclusive, and as a result parliamentary coalition-building involves a great deal of conflict. Everyone tries to get into the winning coalition,

to stay in the winning coalition, and to keep excess members out of the winning coalition. Building a coordinating coalition involves no such struggling because every old member welcomes every new member of the coalition.

A large number of people being involved in a situation has certain implications for the cause of coordination problems between them. The more actors that are involved in a situation the less certain any one actor can be that he knows precisely what everyone else will do under conditions of independent decision-making. Not knowing what they will do, he does not know how he should react. The greater his uncertainty the greater the risk that an undesirable outcome will accidentally occur. Coordination problems involving several individuals, then, are largely the results of such confusion; and the great advantage of coordinating coalitions with many members is that the coordinating scheme allows everyone to know what everyone else will do.

The involvement of several actors also has implications for the steps that will be required to solve their coordination problems. First, the more individuals involved in a coordinating coalition the greater the chances that there will be someone who is tempted to defect from the coordinating scheme, and hence the greater the probability that the coordinating scheme will have to be enforced against someone. Second, the likelihood of a conflict of interest over the choice of coordinated solutions also increases as the size

of the coordinating coalition increases. It is conceivable that two individuals might be indifferent between all possible coordinated solutions, but it would be incredible for a hundred or a thousand individuals all to be indifferent between all possible coordinated solutions. The larger the coordinating coalition the ~~great~~er the chances of a conflict of interests over this issue and hence the greater the probability that arbitration will be required.

The tendency to impose apparently unnecessary sanctions on defections from the coordinating scheme will also increase with the size of the coordinating coalition. As discussed in Section 3-3, men favor such sanctions as protection against the bad consequences of others misrepresenting their preferences. The larger the group the more difficult it is for any member of the group to know everyone else's preference ordering. Since the chances of successful misrepresentation increases with group size, the allure of this protective device of unnecessary sanctions will also increase with the size of the coordinating coalition.

3-5: Coordinating Through Rules

Establishing substantive rules of conduct is one method of coordinating behavior. The common element in the several different types of rules (moral norms, legal rules, rules of thumb, etc.) is the tendency for rules to regularize the

the rule-bound individual's conduct. Anyone can predict what a rule-bound man will do provided he know what rule the man follows and how the rule applies in the present circumstances. Thus, rules can eliminate confusion about what others will do, one of the causes of coordination problems. A second cause, the temptation of a dominant strategy or outcome, can also be eliminated by a rule directing adherence to a coordinating scheme.¹⁴

Coordination is entirely possible without rules, but it is likely to be quite expensive. In the absence of rules, members of a coordinating coalition would have to arrange a new coordinating scheme to meet every new coordination problem. This involves, at the least, the substantial costs of informing everyone of the details of each new coordinating scheme. The need for frequent arbitration would only add to the costs.

Substantive rules reduce these costs by specifying classes of essentially similar coordination problems and directing a particular coordinating scheme to be used in solving each type of coordination problem. Rules reduce the costs of arbitrating and communicating the details of the coordinating scheme--once one learns the rule he can apply it himself to see which coordinating scheme is to be used in any given situation covered by the rule.

Rules have disadvantages as well. By their nature, they direct that similar matters be handled in the same way. But similar is not identical, and a solution that is exceptionally appropriate in one instance might be substantially less

appropriate in a very similar case. Thus, rules gain the advantage of reduced decision costs only at the expense of producing slightly worse decisions. This danger can be reduced by increasing the complexity of the rule so it will make finer distinctions between classes of cases. But the more complex the rule the more difficult and more costly it is to apply. Thus, the performance of a rule can be improved only at the expense of increasing the decision costs. Presumably, there is some point beyond which the improvements from increased complexity are not worth the increase in decision costs, and Rational Men will devise substantive rules of that degree of complexity to guide their coordinating coalitions.

3-6: Coercion and Exploitation

When a coordination problem is solved, everyone involved is better off than before. Many coordination problems cannot be solved without using some enforcement mechanism, either threats or offers. The former are certainly coercive; some would argue that the latter can also be. A by-product of this discussion of coordination problem, then, is the demonstration that a system of "mutual coercion mutually agreed upon" might be mutually beneficial.¹⁵

A Rational Man would agree to being coerced into adhering to a coordinating scheme if three conditions hold.

First, he must regard the situation as a coordination problem and the coercively-imposed outcome as a coordinated solution. That is to say, he must prefer joint to independent decision-making on the matter, and joint pursuit of the coordinating scheme must offer him more than he expects from independent action. Second, he must think the coordinating scheme will be sufficiently implemented if he agrees to being coerced.¹⁶ Third, he must suppose that it will not be implemented if he does not agree. As a guarantee of the second condition, a Rational Man usually insists that everyone else involved must also agree to being coerced into adhering to the scheme.

Depending on how they are used, coercive institutions might benefit everyone or they might benefit a few at the expense of many others. Coercive institutions are often a precondition to implementation of a coordination scheme which would make everyone better off. The same institutions might also be used to exploit some individuals for the benefit of others. "Exploitation" is said to occur when an individual is coerced into surrendering more than he receives in return.¹⁷

A true coordination scheme can never be exploitative-- every member of the coordinating coalition must think himself better off in the coalition than outside it or it is not truly a coordinating coalition. There are, however, three ways in which coordination and exploitation might be linked. The first has been mentioned; the coercive institutions justified

in terms of coordination might also be used for exploitation. Second, the same situation might strike some individuals but not others as a coordination problem. Those who do not regard it as a coordination problem are exploited if they are coerced into a coordinating coalition in this situation. Third, an individual might regard a situation as a coordination problem but he might disagree that the outcome which is coercively imposed is a coordinated solution. That is to say, he perceives that there exists a solution (or set of solutions) joint pursuit of which would make everyone better off than they expect to be acting independently, but he does not regard the imposed solution as a member of that set; and he would prefer to act independently rather than have the chosen outcome imposed.

By definition, a man who is exploited suffers some losses. As a result, there often is at least a potential benefit for someone else to collect. A Rational Man opposes exploitation if he expects to be exploited; he favors it if he expects to exploit others. More precisely, he will seek institutional arrangements which preclude (or minimize the chances of) exploitation if his expected losses from being exploited outweigh his expected gains from exploiting others; and he will oppose such arrangements if the converse is the case.

Some individuals can be fairly certain that, if exploitation is permitted, they will be the ones who are exploited

A few others can be reasonably confident that they will be the ones taking advantage of rules allowing exploitation. But most people will be far from certain whether they will, on balance, gain or lose from exploitation. Under such conditions, they would be taking a risk in opting for a system which allows exploitation, and their risk is increased either if the costs of being exploited is increased or if the uncertainty of whether or not they will be the ones exploited is increased. Most individuals are, to a greater or lesser extent, averse to taking risks; that is, the larger the risk the less likely they are to take it. Individuals for whom allowing exploitation is a risk would be expected to urge institutional arrangements which reduce their risk, either by decreasing the costs of being exploited (eg., fixing limits on how much might be demanded of them) or by decreasing the probability of their being exploited (eg., by prohibiting exploitation of the many by the few while allowing exploitation of the few by the many--there is a better chance of being among the many than the few). If the risk of exploitation is sufficiently large, however, it is likely that neither of these devices will reduce it to acceptable proportions.¹⁸

NOTES

¹ Independent and joint decision-making are pure forms. Most actual decisional processes display mixed characteristics. There are, however, analytic advantages in concentrating on

pure forms. The results are extended to cases of "imperfect" coordination in note 4.

² Decision-making under conditions of certainty can be treated as a special case. If player 1 feels certain that player 2 will do β_1 then he simply attaches a probability of 1.0 to that event and a probability of zero to all others. Thus,

$$\begin{aligned} EU_1(\alpha_1) &= (1.0) U_1(\alpha_1, \beta_1) + (0.0) U_1(\alpha_1, \beta_2) + (0.0) U_1(\alpha_1, \beta_3) \\ &\dots + (0.0) U_1(\alpha_1, \beta_n) \\ &= U_1(\alpha_1, \beta_1) \end{aligned}$$

Of course, player 1 might err in feeling certain that he knows what player 2 will do, in which case the utility he receives from doing α_1 is different from the utility he expects.

³ The omniscient observer with his perfect information knows that the outcome of independent decision-making will be (α_e, β_f) . If the actors involved have equally perfect information, we would expect

$$EU_1(\alpha_e) = U_1(\alpha_e, \beta_f) \quad \text{and} \quad EU_2(\beta_f) = U_2(\alpha_e, \beta_f)$$

In other words, if player 1 knows that player 2 will do β_f then he chooses an α_e that maximizes his reward when player 2 does β_f ; and if player 2 knows that player 1 will do α_e then he does whatever β_f that maximizes his gain when player 1 does α_e . In practice, players rarely have perfect information about the other's utility function, so it is better to preserve the expected utility formulation to reflect the real decision that usually faces actors.

⁴ The effect of coordination in general is to alter the probabilities of each individual performing certain actions. Let $p_{\alpha_1}^*$ represent the post-coordination probability of player 1 doing α_1 and $p_{\beta_1}^*$ represent the post-coordination probability of player 2 doing β_1 . For player 1 to prefer coordination to independent decision-making, his expected gains from doing α_c under conditions of coordination (i.e., with altered probabilities of what the other player will do) must exceed his expected gain from doing α_e independently. That is

$$p_{\beta_1}^* U_1(\alpha_c, \beta_1) + p_{\beta_2}^* U_1(\alpha_c, \beta_2) + \dots + p_{\beta_n}^* U_1(\alpha_c, \beta_n) >$$

$$p_{\beta_1} U_1(\alpha_e, \beta_1) + p_{\beta_2} U_1(\alpha_e, \beta_2) + \dots + p_{\beta_n} U_1(\alpha_e, \beta_n)$$

subtracting

$$p_{\beta_1} U_1(\alpha_c, \beta_1) + p_{\beta_2} U_1(\alpha_c, \beta_2) + \dots + p_{\beta_n} U_1(\alpha_c, \beta_n)$$

from each side and collecting terms

$$(p_{\beta_1}^* - p_{\beta_1}) U_1(\alpha_c, \beta_1) + (p_{\beta_2}^* - p_{\beta_2}) U_1(\alpha_c, \beta_2) + \dots + (p_{\beta_n}^* - p_{\beta_n}) U_1(\alpha_c, \beta_n) >$$

$$p_{\beta_1} [U_1(\alpha_e, \beta_1) - U_1(\alpha_c, \beta_1)] + p_{\beta_2} [U_1(\alpha_e, \beta_2) - U_1(\alpha_c, \beta_2)] + \dots +$$

$$p_{\beta_n} [U_1(\alpha_e, \beta_n) - U_1(\alpha_c, \beta_n)]$$

This can also be expressed

$$\sum_{i=1}^n (p_{\beta_i}^* - p_{\beta_i}) U_1(\alpha_c, \beta_i) > \sum_{i=1}^n p_{\beta_i} [U_1(\alpha_e, \beta_i) - U_1(\alpha_c, \beta_i)]$$

For player 2 to prefer coordinated to independent decision-making a similar inequality must hold.

$$\sum_{i=1}^m (p_{\alpha_i}^* - p_{\alpha_i}) U_2(\alpha_i, \beta_c) > \sum_{i=1}^m p_{\alpha_i} [U_2(\alpha_i, \beta_c) - U_2(\alpha_i, \beta_e)]$$

In other words, Rational Men will favor coordination if and only if the losses from doing less profitable actions (α_c instead of α_e ; β_c instead of β_e) are more than offset by the gains from altering (or probably altering) the actions of others, increasing on balance the probability of good outcomes and decreasing on balance the probability of bad ones.

⁵ See the classical summary of game theory, Luce and Raiffa, Games and Decisions. Cooperative games are discussed by Luce and Raiffa, 114-54; see also R.B. Braithwaite, The Theory of Games as a Tool for the Moral Philosopher (Cambridge: Cambridge University Press, 1955) and Thomas C. Schelling, The Strategy of Conflict (Cambridge: Harvard University Press, 1963), especially 291-303.

⁶ If either player has a strictly dominant strategy consistent with production of the coordinated solution, then no coordination problem exists because the other player has no reason to prefer joint to independent decision-making. If α_c is Albert's strictly dominant strategy, Albert will do α_c under

conditions of independent decision-making. Thus, Bernard could, acting independently, produce the same outcome (α_c, β_c) as would result from joint decision-making; and therefore he has no reason to prefer joint decisional processes. Sometimes Bernard could also produce some outcome (α_c, β_j) which pays him more than (α_c, β_c) in which case Bernard would actually oppose joint decision-making.

On the Prisoner's Dilemma, see Luce and Raiffa, Games and Decisions, 96-7; R.L. Cunningham, "Ethics and Game Theory: The Prisoner's Dilemma," Papers on Non-market Decision Making, 00 (1967), 11-27, and Anatol Rapoport and Albert M. Chammah, Prisoner's Dilemma, A Study in Conflict and Cooperation (Ann Arbor: University of Michigan Press, 1965). On the Chicken Game, see Rapoport and Chammah, "The Game of Chicken," Game Theory in the Behavioral Sciences, ed. I.R. Buchler and H.G. Nutini (Pittsburgh: University of Pittsburgh Press, 1969), 151-75.

⁷ On signals, see Schelling, The Strategy of Conflict. For discussions of signals with special reference to the Prisoner's Dilemma, see Luce and Raiffa, Games and Decisions, 98-102 and Brian Barry, Political Argument (London: Routledge and Kegan Paul, 1965), 253-6.

⁸ This analysis of the function of the arbiter resembles that of John G. Cross, The Economics of Bargaining (New York: Basic Books, 1969), Chapter 5; Torstein Eckhoff, "The Mediator, the Judge and the Administrator in Conflict Resolution," Acta Sociologica, 10 (1966), 148-72; and, to a lesser extent, Oran R. Young, "Intermediaries: Additional Thoughts on Third Parties," Journal of Conflict Resolution, 16 (1972), 51-65. Francis Y. Edgeworth, Mathematical Psychics, An Essay on the Application of Mathematics to the Moral Sciences (London: Kegan Paul, 1881), 51-6 also assigns a similar role to the arbiter. In the Edgeworth box, each actor prefers an outcome on the contract curve to non-agreement, but there is a conflict of interest between actors over the choice of the specific point on that curve (the details of the contract). The function of the arbiter is to specify one of the points on the contract curve and thus avoid non-agreement. This, incidentally, is how Edgeworth joins the Economical and Utilitarian Calculus: the Economical (egoistic) Calculus dictates that the solution be on the contract curve and the disinterested arbiter chooses the point on that curve dictated by the universalistic Utilitarian Calculus. Similarly, Yves R. Simon, Philosophy of Democratic Government (Chicago: University of Chicago Press, 1951), 19-35 argues that when there are several possible means to attainment of Common Goals some Authority will be needed to specify which course of action is to be pursued.

⁹ This analysis utilizes the tools of John F. Nash, "The Bargaining Problem," Econometrica, 18 (1950), 155-62 (summarized in Luce and Raiffa, Games and Decisions, Chapter 6) and Robert Axelrod, Conflict of Interest. This discussion reverts to Nash's earlier model at two points where, at least for present purposes, Axelrod's is inferior. (1) Point E in Figs. 2,3,4 and 5 corresponds as in Nash's model to the gains players expect from playing the game independently; this might but need not be the same as the "non-agreement" point, Axelrod's equivalent. (2) When Axelrod "normalizes" the game he not only moves the origin to point E but he also recalibrates the axis so the best each player can do without the other "vetoing" the scheme corresponds to one unit. Nash simply moves the origin without recalibrating the axes.

¹⁰ A list of all possible divisions of the goods is the same as a list of all possible side payments that players can make to each other out of their gains from a single playing of the game.

There are two ways of making any point inside the closed figure possible when the goods are not infinitely divisible. One involves joint randomization. Players agree to abide by the outcome of some random process with a pre-arranged probability of directing players to produce each outcome in the game. By varying the probabilities of the process directing each outcome, the expected utilities to players from the joint randomization can be made to range across the set of points inside the closed figure. The other way is to repeat the game between the same players an infinite number of times. In that case, players can arrange to "win" and "lose" with any frequency, and their average utilities can be made to range across the set of points inside the closed figure.

¹¹ Eckhoff makes similar comments about conditions under which third party intervention will be needed; and Cross similarly supposes that the advantage of arbitration is that it speeds the negotiations.

Were parties acting independently in choosing coordinated solutions which would subsequently be jointly pursued, these problems would be significantly reduced. Since coordinated solutions are advantageous only if jointly pursued, each actor would strive to choose one which he supposes the other will also choose. The probability of the other choosing any given solution is a function of his gain from it. Thus, independent actors would choose coordinated solutions with an eye to the other's reward from it as well as to his own. The complications arise precisely because the choice of coordinated solutions is made jointly, where the emphasis is on bluff

and bluster as tools for misrepresenting one's preferences. See Schelling, The Strategy of Conflict, especially Chapter 2 and Cross, The Economics of Bargaining.

¹² Strictly speaking, everything depends on a player's expectation of being able to improve his position through renegotiation, which in turn depends both on how much he stands to gain and on the probability he will realize that gain. But that probability seems independent of the degree of conflict of interest; it is a function of how badly he negotiated last time and how much better he thinks he can do next time, and these factors have little if anything to do with the extent of the conflict of interest over coordinated solutions. Thus, the probability can be held constant, so the greater the possible gains from renegotiation the more a player expects to gain from such a renegotiation.

¹³ David K. Lewis, Convention, A Philosophical Study (Cambridge: Harvard University Press, 1969) discusses the Telephone Game. Luce and Raiffa, Games and Decisions, 90-4 discuss the War of the Sexes. Braithwaite, Theory of Games as a Tool for the Moral Philosopher and Luce and Raiffa, Games and Decisions, 114-54 discuss similar two-person cooperative games.

¹⁴ This corresponds to the distinction between "summary" and "practice rules" in John Rawls, "Two Concepts of Rules," Philosophical Review, 64 (1955), 1-32. In general, see Phillip B. Heynmann, "The Problem of Coordination: Bargaining and Rules," Harvard Law Review 86 (1973), 797-877.

¹⁵ On the notion of "coercion," see Robert Nozick, "Coercion," Philosophy, Politics and Society, 4th Series, ed. P. Laslett, W.G. Runciman and Q. Skinner (Oxford: Blackwell, 1972), 101-35; and J. Roland Pennock and John W. Chapman (eds.), Nomos XIV: Coercion (New York: Atherton, 1972), especially articles by Michael D. Bayles, "A Concept of Coercion," pages 16-29, Bernard Gert, "Coercion and Freedom," pages 30-48, and Virginia Held, "Coercion and Coercive Offers," pages 49-62.

"Mutual coercion mutually agreed upon" seems to be what Thomas Hobbes had in mind in the Leviathan, and it clearly corresponds to the version of the argument offered by David Hume, A Treatise of Human Nature, III, ii, 2. Similar modern arguments include: Garrett Hardin, "The Tragedy of the Commons," Science, 162 (13 December 1968), 1243-8; Thomas C. Schelling, "On the Ecology of Micromotives," The Public Interest, 25 (1971), 61-98 and Schelling, "Hockey Helmets, Concealed Weapons and Daylight Saving: A Study of Binary Choices with Externalities," Journal of Conflict Resolution, 17 (1973), 381-428; Mancur Olson, The Logic of Collective Action, Chapter 3; and William J. Baumol, Welfare Economics and the Theory of the State, 2nd edition, (London: G.Bell, 1965), 174ff.

¹⁶The criterion of sufficiency is as specified in note 4.

¹⁷In a broader sense, he might also be "exploited" if he is fooled (or brainwashed) into surrendering more than he receives. This discussion, however, uses only the more narrow coercion-based definition.

¹⁸A more complete argument along these lines is developed in Chapter 5 in connection with the rationality of the Fairness Principle, which is a special sort of non-exploitation rule.

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CHAPTER 4: METHODS OF SOCIAL COORDINATION

This chapter first suggests reasons for believing that societies often face coordination problems of the sort described in Chapter 3. Then two alternative methods of social coordination are discussed. The basic difference between them is that the social process of mutual adjustment of interested parties requires no governmental intervention, whereas the political-legal process does. The fact that social and political-legal processes both perform the same function lends partial support to the anarchist claim that governments might be dispensable. Section 4-3, however, suggests that the social process is not a perfect substitute for the political-legal process. The process of mutual adjustment is limited in several ways in which the political-legal process is not, and in those cases government is required if social coordination is to be successful. The final section concerns questions of how a government is to be organized if it is to achieve its twin goals of coordinating behavior and avoiding exploitation.

4-1: The Prevalence of Social Coordination Problems

One way of demonstrating the prevalence of social coordination problems is to recall the several specific social problems that have been recognized to be coordination problems of the sort described in Chapter 3. Absence of uniform terminology might obscure the impressive similarity of

the analyses and conclusions. One of the primary themes of linguistic philosophy following Wittgenstein is that, since the point of speaking a language is to be understood, "private languages" must be rejected in favor of more coordinated linguistic behavior. The provision of public good, a pervasive problem in public finance, obviously involves a coordination problem. A.K. Sen analyzes the social rate of savings as a coordination problem of either the Chicken or Prisoner's Dilemma variety. Thomas C. Schelling suggests that residential neighborhoods might become racially segregated because uncoordinated home buying cannot assure an acceptable racial mix in the neighborhood. Garrett Hardin attributes the tragic overuse of natural resources and environmental pollution to uncoordinated use of the modern Commons. Mancur Olson demonstrates that formation of and support for "interest groups" (especially trade unions and international alliances) is a further example of a coordination problem.¹

Perhaps a more convincing demonstration of the significance of social coordination problems comes as a result of focusing on two especially pervasive social phenomena. One argument regards the function of social rules, which in general can be seen to be responses to coordination problems. Another is conflict-avoidance and reaching a compromise settlement, which also involves a coordination problem.

4-1-a: Social Rules

Typically, a social rule is clearly a response to a coordination problem. The content of a social rule is ordinarily such that an individual benefits if and only if others adhere to the rule. His own adherence to the rule does not directly benefit him; on the contrary, it usually entails some costs to him. People benefit from being told the truth, not from telling the truth; people benefit from not being assaulted, not from refraining from assaulting others.² Usually the costs of adhering to the rule are rather marginal, so individuals would prefer everyone (themselves included) adhere to the rule to no one adhering. But each individual's "best possible world" is one in which everyone else adheres to the rule and he alone defects. His "worst possible world" is one in which everyone else defects and he alone adheres. If the "society" is composed of two individuals with this preference ordering, the situation can be represented by Matrix 4-1 where a payoff of 1 corresponds to each player's worst possible world and 4 to his best.

Matrix 4-1:

		<u>player 2</u>	
		Follow rules	Not follow rules
<u>player 1</u>	Follow rules	(3,3)	(1,4)
	Not follow rules	(4,1)	(2,2)

This is clearly a coordination problem of the Prisoner's Dilemma variety (see Ch.3, Figs.3-1 and 3-6).³ The necessity of enforcing the coordinated solution (both following rules) is obvious from this specification of the situation. The need for arbitration becomes equally obvious when the variable content of the rules is considered.

4-1-b: Conflict Avoidance

Actors would always most prefer winning a complete victory without a struggle. But in a great many cases they could reach a compromise agreement paying each more than his expected net gain from complete victory after a fight. This is because a compromise agreement affords everyone a partial victory and it saves everyone the costs of a conflict. The "opportunity costs" of a conflict are likely to be substantial: the resources expended in the course of a struggle can often be put to much more rewarding uses.⁴

There are two alternative models of the strategic predicament involved in conflict-avoidance:

Matrix 4-2: Conflict avoidance as Chicken

		<u>player 2</u>	
		intransigent	compromise
<u>player 1</u>	intransigent	(1,1)confl.	(4,2)
	compromise	(2,4)	comp.(3,3)

Matrix 4-3: Conflict-avoidance as Prisoner's Dilemma

		<u>player 2</u>	
		<u>intransigent</u>	<u>compromise</u>
<u>player 1</u>	<u>intransigent</u>	(2,2)conf.	(4,1)
	<u>compromise</u>	(1,4)	(3,3)comp.

In both models, a compromise solution pays each actor more than a conflict. Which model is appropriate depends on how bad a conflict would be compared to allowing the other a complete victory. If it is better to allow the other his way than to fight (as in a nuclear confrontation) then the Chicken (Matrix 4-2) model is appropriate. If it is better to fight than to allow the other complete victory then the Prisoner's Dilemma (Matrix 4-3) model is appropriate.⁵

4-2: Social and Political Solutions

There are two quite distinct approaches to the solution of coordination problems. One approach is social; the other is political-legal. This section attempts to distinguish between them.

The political-legal process is the more familiar of the two. The foundation of a legal system is the "rule of recognition." A rule is a legal rule if and only if it can be immediately derived from the rule of recognition (i.e., is implicit within it) or if it can be ultimately traced to it (eg., the Constitution makes the President Commander-in-Chief; President Truman authorized MacArthur as Supreme Commander in

the Pacific; hence, MacArthur's power can be traced to the rule of recognition, the Constitution). Legal rules either impose legal duties or confer legal powers. The latter can, depending on the terms of the grant of power, be used to impose duties or be further delegated.⁶

The social process is essentially a process of mutual adjustment. Interested parties simply bargain among themselves, each responding to the actions of others and they to his, until some sort of equilibrium is reached. Unlike the political-legal process, the social process involves no "authorities" other than the interested parties themselves. Since protracted and repeated bargaining is costly, the parties are likely to embody the results of one round of bargaining in rules (moral norms) which remain in force until challenged. Once the rules are seriously challenged, they will be revised according to the same process of mutual adjustment.⁷

Of the three steps which might be involved in solving a coordination problem, only communication is always required. To a large extent, both the political-legal and social processes coordinate behavior through the use of settled rules. In principle, legal and moral rules might be communicated in quite different ways; legal rules are usually codified and can therefore be read while social (moral) rules, by reason of their origin in the mutual adjustment process, are usually more of the form of tacit "understandings." In practice, however, the most important method of communicating

settled norms, legal and moral alike, is through socialization processes. Few U.S. citizens need to consult a lawyer or the U.S. Code to know what their legal duties are. Social and political-legal processes differ primarily in their procedures for communicating changes in rules. Laws are changed by specific actions of identifiable lawmakers, so changes in legal rules can be and usually are "announced." Given the nature of the mutual adjustment process for changing social (i.e., moral) rules, new social rules are perceived and heralded but not authoritatively announced. It is impossible to know exactly when a new social rule has replaced an old one (when the mutual adjustment process has reached a new equilibrium), so there is no "fact" of a change to be announced and more intuitive approaches are in order.

As regards the second step, arbitration, the two processes differ dramatically. In the social process of mutual adjustment, interested individuals arbitrate their own disputes over coordinated solutions. Only very rarely is an impartial arbitrator involved in such negotiations.⁸ The political-legal process has two ways of solving the arbitration problem: duty-imposing laws can settle the matter directly by specifying what is to be done and which coordinating scheme is to be pursued; or power-conferring laws can authorize an arbitrator to decide what is to be done. (This power might, of course, be conferred on one of the interested parties to the dispute.) Ordinarily, political-legal arbitra-

tion procedures are used to supplement social procedures, not to replace them, and many legal instruments (eg., for creating contracts, marriages, banks, trade unions, etc.) serve to give legal status to the results of "private ordering."⁹

Enforcement of the coordinating scheme, the third step in solving a coordination problem, might be required in connection with arbitration or as a result of the structure of the strategic situation in which individuals find themselves. A relatively wide range of enforcement mechanisms are available with the political-legal process. Laws can be enforced by attaching sanctions to breach of legal duties or by attaching rewards to the performance of duty-bound actions. With the social process of mutual adjustment, enforcement mechanisms are much more limited. The only possible enforcement is through the conditional promise of adherence to the coordinating scheme: interested parties agree to adhere if and only if all other parties will adhere but swear to defect if any other does. If others make and keep similar conditional promises, each man will himself adhere to the coordinating scheme because joint pursuit of the coordinated solution pays him more than he expects to gain from acting independently. If others defect from the scheme, each man will himself defect. Sometimes he does so simply to punish the defector and dissuade him from repeating his treachery, but more often it is purely a matter of maximizing

his own gains. When others defect a man's most profitable strategy is usually something other than adhering to the coordinating scheme (as, for example, in the Prisoner's Dilemma).¹⁰

The strength of implicit norms of reciprocity, implicit "I will if and only if you will" agreements, is often demonstrated. Within a group of oligopolists, each maintains high prices only so long as all others do likewise. As soon as anyone cuts his prices, all others do likewise. In a large firm, interdepartmental relations are cooperative only so long as all departments behave cooperatively; if one behaves conflictually all others will do likewise. Experiments with repeated playings of the Prisoner's Dilemma game between the same two players show that, after a few initial rounds, both players refuse to confess. But if one defects from this tacit agreement and confesses, the other will defect and confess in the next round.¹¹

Rational Men will adhere to a coordinating scheme only so long as they can trust others to adhere. One man decides to trust another on the basis of his past behavior. If he has defected from coordinating schemes before, then he is likely to defect again. If he has always adhered to coordinating schemes in the past he is likely to adhere in the future. Information about past behavior might come from the man's own past dealings with him or from his reputation, which is based on others' past dealings with him. This, in turn, gives

everyone a motive for adhering to coordinating schemes. Each man wants a reputation for being trustworthy because only in that way can he persuade others to adhere to the coordinating scheme when dealing with him.¹²

4-3: Limits of the Social Process

In order to solve coordination problems, communication is always required and arbitration and enforcement might also be. With respect to each of these, the social process of mutual adjustment is limited in ways the political-legal process is not. Use of the political-legal process will be required to solve coordination problems which the social process cannot solve.

4-3-a: Communication

Unlike the political-legal process, the mutual adjustment process provides for no authoritative spokesman. There is no one to announce what the social rules are, when they have been changed or how they apply to specific cases. Each of the interested parties must simply attempt to interpret the "shared understandings" as best he can. If parties interpret these understandings differently, then the communication through mutual adjustment processes has proved inadequate. The political-legal process significantly reduces these sources of "noise" on communications channels. Legal systems contain rules of recognition so citizens can conclu-

sively determine what the legal rules are, rules of change enabling them to know when the laws have been changed, and rules of adjudication to determine how the rules apply to specific cases.¹³

4-3-b: Arbitration

The social process provides no independent arbitrator, so the interested parties must settle disputes over the choice of coordinated solutions between themselves. They will probably manage to do this when their conflict of interest over coordinated solutions is slight. But when the parties have a large conflict of interests over the choice of a coordinated solution it is unlikely that they will be able to resolve the dispute without the intervention of an intermediary.¹⁴ The political-legal process does not leave the choice of coordinated solutions entirely to the interested parties themselves. It might, of course, ratify those decisions that parties do succeed in reaching through the mutual adjustment process. But it can also arbitrate disputes over the choice of coordinated solutions through laws which impose a duty to adhere to one particular coordinating scheme or through laws which empower an arbitrator to impose a coordinating scheme.

4-3-c: Enforcement

Possibly the most serious flaw in the mutual adjustment

process as a method of achieving social coordination regards its limited ability to enforce the coordinating scheme. Its sole enforcement technique is the "I will if and only if you will" promise. Three conditions must hold if Albert is to be successful in securing Bernard's adherence through a conditional promise to adhere to the coordinating scheme: Albert must be able to identify Bernard; Albert must be able to recall whether in the past Bernard adhered to or defected from coordinating schemes (knowledge of his reputation can be substituted); and Albert must be able to exclude Bernard (and Bernard alone) from the advantages of Albert's adherence to the coordinating scheme. The first two conditions will only be satisfied in small group interactions. In large groups it is impossible to know everyone and to be able to connect him with his reputation.¹⁵ Whether or not the last condition holds depends on a characteristic of the goods involved in the interaction. A good is a "public good" for a group of individuals if it cannot be provided for any one of the members of the group without being made available to all of them. Sometimes men who defect from a coordinating scheme providing a group with a public good can be punished by being expelled from the group enjoying the good. (Economists term such a group a "club.") Often, however, the membership of the group is fixed. When it is, a man cannot carry out his "I will **defect** if you do" threat against a defector without also harming all members of the group enjoying the

public good.¹⁶

Both of these limitations can, to some extent, be removed by governmental action. "I will if and only if you will" enforcement techniques can be made more effective if the size of the interacting public is reduced, and there is much a government can do to achieve this goal. High-rise apartment complexes can be prohibited, the number of through streets in a city reduced, and the corner shop subsidized.¹⁷ Governmental action might also enable some groups now unable to exclude non-contributors to the production of a public good to do so. There would be no need to coerce workers to join trade unions, for example, if the wage increase negotiated by a union were, by law, available only to members of that union.

The political-legal process might be used in these ways to shore up the enforcement mechanisms of the social process, but it can also be used to enforce directly the coordinating scheme. Laws can be enforced by punishing illegal behavior or rewarding legal behavior. Just as individuals involved in the process of mutual adjustment have difficulty knowing whether a man has defected from the coordinating scheme, so too do officers of the law have difficulty in determining whether a man has behaved illegally. Once they make this determination, however, there are no further bars to prevent them from inflicting the prescribed harm on him. There is a similar problem involved in substantiating an individual's

claim for a reward due him by virtue of his legal behavior. But, again, once the investigation has been completed there are no further bars to prevent payment of the prescribed reward.

Enforcement in connection with the arbitration process poses special problems for the "I will if and only if you will" enforcement technique. There the conditional promise will have little if any impact. The potential defector might be prepared to suffer substantial losses in several rounds of the game in order to force renegotiation of the choice of coordinated solutions; it is rational for him to do so if he supposes that the renegotiation he prompts will produce a coordinated solution sufficiently more favorable to him to overcome the losses he has incurred in the process of forcing the renegotiation. He would, of course, rather that the other play the "sucker" move, adhering to the coordinating scheme while he defects. That, however, is not at all essential to the success of his scheme--it is simply an "extra". Use of the sanctions and offers of the political-legal process seem to be required for enforcement in connection with arbitration. The mutual adjustment process is hopelessly inadequate to that task.

4-4: Organizing a Government

The foregoing argument demonstrates the need for political-legal processes in resolving certain classes of

coordination problems. Those processes necessarily involve activities traditionally associated with governments (making, promulgating, interpreting and applying and enforcing laws); so Section 4-3 has established the need for government, at least with respect to these classes of coordination problem. This section focuses on considerations related to the task of organizing a government for the purpose of solving such coordination problems. It first discusses what is necessary to produce a government adequate to coordinate, and it then discusses what is necessary to keep the government from moving beyond coordination to exploitation.

4-4-a.

Coordination through the political-legal process presupposes both that certain institutions (a legislature, judiciary and executive) exist and that they are operative. Some founding fathers must have gone to the trouble of creating these institutions, and some contemporary politicians must staff the positions of legislator, clerk, judge, arbitrator and executive. Presuming both these groups are composed of Rational Men, they provide these services only if they are rewarded for their efforts. While it is true that these men would probably benefit qua citizen from the coordinating services they provide qua government, that is not a sufficient incentive for them to provide the service. They would benefit equally from coordinating services provided by anyone else's

government, and they would not bear the costs (mostly in terms of forgoing other opportunities) entailed in public service. One necessary condition for the implementation of political-legal processes, then, is that selective incentives be offered for public service.¹⁸

A further necessary condition for making political-legal processes operative requires "respect for process" from all those yielding authority within a government. Judges, for example, must decide cases according to the laws enacted by the legislature; the executive must enforce the laws enacted by the legislature as interpreted by the judiciary. It might be observed as an empirical generalization that governments tend toward instability where "respect for process" is lacking. But even if they were stable, their directives would, when taken as a whole, be inconsistent and consequently incapable of performing a coordinating function. Here again, special care must be taken to structure incentives in such a way as to achieve "respect for process."¹⁹ It does not automatically follow from the fact that all benefit from the system that all will respect (i.e., abide by) its requirements unless one makes the implausible assumption that any act of disrespect will cause the system to collapse. A Rational Man will obviously try to increase his gain in ways the system prohibits if he thinks he can get away with it.

4-4-b.

The advantages of government over the mutual adjustment process in solving coordination problems flow largely from its superior capacity to enforce the coordinating scheme. But the same coercive methods essential for enforcing coordinating schemes benefiting all concerned might also be used for exploitation. Capacity for enforcement inherently creates capacity for exploitation; the only reason there is a greater danger of exploitation arising out of governmental action than social processes is that the government is more capable of enforcing its decisions. The advantage of the political-legal process over the social process in this regard is that it can be structured in such a way as to reduce the risks of exploitation.

Basically, the way to prevent citizens from being exploited by their government (or by their fellow citizens operating through their government) is to make the gains of the governors an increasing function of the net gains of the governed. Thus, net gain to the governors is maximized at the same point as is net gain to the populace. Chapter 5 demonstrates that this sum reaches its maximum when everyone is treated fairly, a special case of non-exploitation.

How best to implement this is one of the most persistent problems in constitutional engineering. The fondness generally felt for representative democracy is often attributed to the

success of such schemes in identifying the interests of governors with those of the governed. A representative holds office (and enjoys the selective benefits necessarily appertaining thereto) at the pleasure of his constituents. If he fails to act in their interest, they can turn him out of office and deprive him of its benefits.²⁰ The traditional complaint, of course, regards the danger of majority tyranny: the representative never needs please more than fifty per cent plus one to maintain his perquisites. Significantly, the essence of this objection is that the interest of the governor is not perfectly identified with that of the governed. Fondness for the institutions of representative government and hesitations about it stem from the same source. Equally significantly, the ordinary political remedies--instituting individual rights safe from majority rule and guaranteeing that, if there is exploitation, at least it will be directed against the few--look suspiciously like the reactions of Rational Men minimizing their risks of being exploited.

NOTES

¹ On language, see Ludwig Wittgenstein, Philosophical Investigations, trans. G.E.M. Anscombe (Oxford: Blackwell, 1958) and David K. Lewis, Convention. On public goods and public finance, see Richard A. Musgrave, The Theory of Public Finance (New York: McGraw Hill, 1959); Musgrave and Alan T. Peacock (eds.), Classics in the Theory of Public Finance (New York: Macmillan, 1958); and John G. Head, "Public Goods and Public Policy," Public Finance, 17 (1962), 197-219. A.K. Sen, "Iso-

lation, Assurance and the Social Rate of Discount," Quarterly Journal of Economics, 81 (1967), 112-24. On racial segregation, see Thomas C. Schelling, "On the Ecology of Micromotives," The Public Interest, 25 (1971), 61-98 and Schelling, "Dynamic Models of Segregation," Journal of Mathematical Sociology, 1 (1971), 143-86; and Eugene Smolensky, Selwyn Becker and Harvey Molotoch, "The Prisoner's Dilemma and Ghetto Expansion," Land Economics, 44 (1968), 419-30. On pollution and overuse of resources see Garrett Hardin, "The Tragedy of the Commons," Science, 162 (13 December 1968), 1243-8; Schelling, "On the Ecology of Micromotives"; and A.K. Sen, "A Game-Theoretic Analysis of Theories of Collectivism in Allocation," Growth and Choice, ed. Tapas Majumdar (Oxford: Oxford University Press, 1969), 1-17. On interest groups see Mancur Olson, The Logic of Collective Action and Philip B. Heynmann, "The Problem of Coordination: Bargaining and Rules," Harvard Law Review, 86 (1973), 797-879. On international alliances, see Henry Sidgwick, The Elements of Politics, 2nd edition (London: Macmillan, 1897), Chapter XV; Mancur Olson, Jr., and Richard Zeckhauser, "An Economic Theory of Alliances," Review of Economics and Statistics, 48 (1966), 266-79; and Bruce M. Russett and John D. Sullivan, "Collective Goods and International Organization," International Organization, 25 (1971), 845-65.

² Note the definition offered by James Mill, A Fragment on Mackintosh (London: Baldwin and Cradock, 1835), 249: "The acts which it was important to other men that each individual should perform, but in which the individual had not a sufficient interest to secure the performance of them, were constituted one class. The acts, to which it was important to other men that each individual should abstain from, but in regard to which he had not a personal interest sufficiently strong to secure his abstaining from them, were constituted another class. The first class were distinguished by the name moral acts; the second by the name immoral."

³ This follows the analysis of James M. Buchanan, "Ethical Rules, Expected Values and Large Numbers," Ethics, 76 (1965), 1-13. It is similar in important respects to those of David P. Gauthier, "Morality and Advantage," Philosophical Review, 76 (1967), 460-75 and John Hospers, "Rule-Egoism," The Personalist, 54 (1973), 391-5; and it follows quite clearly from comments by I.M.D. Little, "Social Choice and Individual Values," Journal of Political Economy, 60 (1952), 422-32 at 431 and Kenneth J. Arrow, "The Place of Moral Obligation in Preference Systems," Human Values and Economic Policy, ed. Sidney Hook (New York: New York University Press, 1967), 117-9.

⁴ If an individual can be certain of winning the fight, his net expected gain is simply the gain from the victory less

the costs of the resources expended in the course of the struggle. Usually he is not certain of victory and must also deduct the expected disutility of losing (the probability of losing times the costs of losing).

Johan P. Olsen, "Public Policy-Making and Theories of Organizational Choice," Scandinavian Political Studies, 7 (1972), 45-62 focuses on one resource that is nearly always expended in the course of a struggle, the decision-maker's time. Other resources saved by a compromise vary with the situation. In a legislature, for example, it is votes, as James S. Coleman, "The Benefits of Coalition," Public Choice, 8 (1970), 45-61 at 60 suggests: "The general situation is that an individual will gain by joining a coalition if on at least one decision, but not all, the attitude of the coalition opposes his own. By joining, he frees both votes which he had concentrated on this decision and those which the coalition had concentrated on it, votes that would anyway have been mutually cancelling, and allows those resources to be concentrated on other decisions where both interests and attitudes coincide."

⁵ Michael Nicholson, Conflict Analysis (London: English Universities Press, 1973).

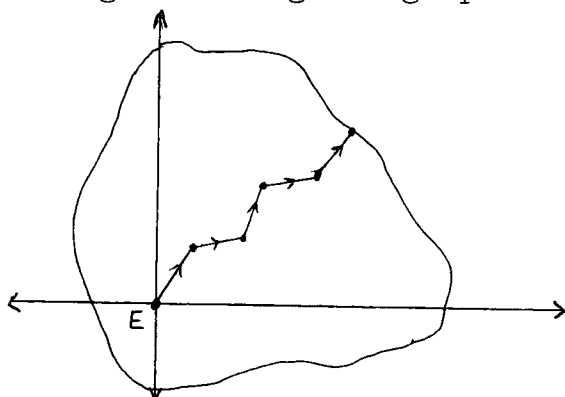
⁶ H.L.A. Hart, The Concept of Law (Oxford: Clarendon Press, 1961); Hans Kelsen, General Theory of Law and State, trans. A. Wedberg (Cambridge: Harvard University Press, 1945). Legal processes might, of course, be used by groups other than those traditionally recognized as sovereign states. The Roman Catholic Church, for example, uses political-legal processes and to the extent it does its rules have the characteristics of law (and, indeed, are called "canon law").

⁷ Robert A. Dahl and Charles E. Lindblom, Politics, Economics and Welfare discuss "bargaining"; and the analysis is carried further by David Braybrooke and Lindblom, A Strategy of Decision (New York: Free Press, 1963) and Lindblom, The Intelligence of Democracy (New York: Free Press, 1965).

⁸ Occasionally there might be a third party who is uninterested in the choice of coordinated solutions but who is very much interested in resolving the quarrel between the principals; in such cases, the third party might act as an intermediary (although not an arbitrator--he has no power to enforce his decision). See Eckhoff, "The Mediator, the Judge and the Administrator in Conflict Resolution," Acta Sociologica, 10 (1966), 148-72. Social conventions can solve "trivial" arbitration problems, where all that must be done is picking out one of the several equally-good possible coordinated solutions; see David K. Lewis, Convention.

The following diagram, borrowed from Kenneth E. Boulding,

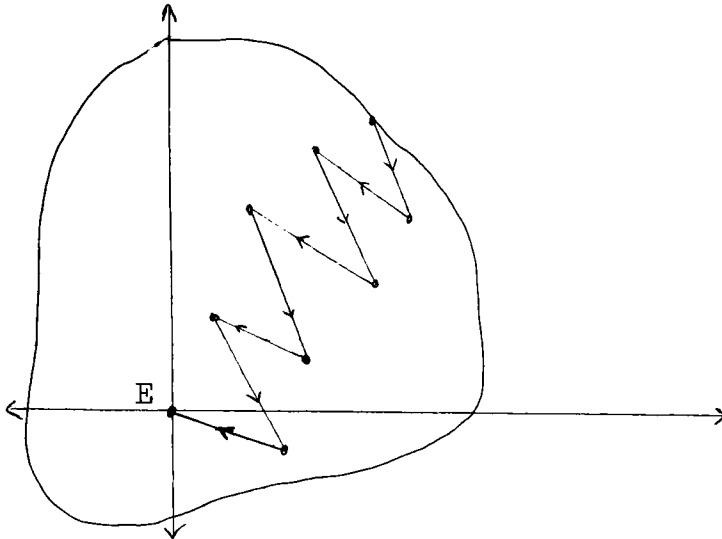
"The Economics of Human Conflict," Collected Papers, II, 325-44 demonstrates how players might reach the Paretian frontier through mutual adjustment. The diagram is a normalized game of the form of Figure 3-3, with the origin (point E) corresponding to the expected gains of the two players from independent action. Points northeast of E are possible coordinated solutions, and the set of points on the northeast boundary is the set of Pareto optimal solutions (no one can be made better off without the other being made worse off). Mutual adjustment can certainly produce solutions on the Paretian frontier if there exists a "path" of the following sort through the bargaining space:



The salient feature of this path is that in each move a player produces outcomes better for both himself and the other. Whether such a path exists depends partly on the decision tree and partly on the preference orderings of players. Mutual adjustment might lead to the Paretian frontier even if no such path exists. Then the premium is on "trust", discussed below.

⁹ Joseph Raz, "On the Functions of Law," Oxford Essays in Jurisprudence, 2nd Series, ed. A.W.B. Simpson (Oxford: Clarendon Press, 1973), 278-304 at 291-3. Henry M. Hart, Jr. and Albert M. Sacks, The Legal Process: Basic Problems in Making and Applications of Law, Tentative Edition (Cambridge, Mass.: Hart and Sacks, 1958) take as one of their central themes "the thesis that private ordering is the primary process of social adjustment in the dynamics of a legal system.... The problems which private orderers are able to solve never reach officials at all. Most of the problems which do reach officials take their shape from the successes and failures of prior efforts at private adjustment" (p. 183).

¹⁰ The degeneration of a coordinating coalition through mutual reprisals can be demonstrated on a diagram similar to the one in note 8 above:



The salient feature of this path is that each actor can continually choose to produce an outcome better for himself but worse for the other until point E (reversion to independent decision-making) is reached.

¹¹ On oligopolies see Michael Nicholson, Oligopoly and Conflict, A Dynamic Approach (Liverpool: Liverpool University Press, 1972). John M. Dutton and Richard E. Walton, "Interdepartmental Conflict and Cooperation: Two Contrasting Studies," Human Organizations, 25 (1965), 207-20. On experiments with the Prisoner's Dilemma, see Rapoport and Chammah, Prisoner's Dilemma; Warner Wilson, "Reciprocation and Other Techniques for Inducing Cooperation in the Prisoner's Dilemma Game," Journal of Conflict Resolution, 15 (1971), 167-95; Morton Deutsch, "Trust and Suspicion," Journal of Conflict Resolution, 2 (1958), 265-79; C. Norman Alexander, Jr. and Harrison G. Weil, "Players, Persons and Purposes: Situational Meanings in the Prisoner's Dilemma Game," Sociometry, 32 (1969), 121-44; and Richard Boyle and Phillip Bonacich, "The Development of Trust and Mistrust in Mixed Motive Games," Sociometry, 33 (1970), 123-39. Less empirically-oriented discussions of trust in relation to the Prisoner's Dilemma are summarized in R.L. Cunningham, "Ethics and Game Theory: The Prisoner's Dilemma," Papers on Non-Market Decision Making, II (1967), 11-27. James S. Coleman, "Collective Decisions," Sociological Inquiry, 34 (1964), 166-81 supports this analysis with propositions about legislative coalitions: he argues that collective behavior is a function of trust and that trust is a function of frequency of interactions.

¹² See Georg Henrik von Wright, "Justice," Varieties of

Goodness (London: Routledge and Kegan Paul, 1963), Chapter X. Sociological discussions of reciprocity and trust are partially relevant. See Alvin W. Gouldner, "The Norm of Reciprocity: A Preliminary Statement," American Sociological Review, 25 (1960), 161-78; and Richard H. Conviser, "Toward a Theory of Interpersonal Trust," Pacific Sociological Review, 16 (1973), 377-99.

Henry Sidgwick, The Methods of Ethics, 7th edition (London: Macmillan, 1907), 167 observes that "morality prescribes the performance of duties equally towards all, and that we should abstain as far as possible from harming any; but on the principle of Reciprocity we should exhibit our useful qualities chiefly towards the rich and powerful, and abstain from injuring those who can retaliate; while we may reasonably omit our duties to the poor and feeble, if we find a material advantage in so doing, unless they are able to excite sympathy of persons who can harm us." Sidgwick seems justified in finding this result morally repugnant and concluding that, therefore, the principle of Reciprocity is insufficient to account for our considered moral judgments about what ought to be. Unfortunately, it seems substantially correct in explaining political realities. The poor and powerless are exploited in ways in which they would not be if they were rich and powerful. Michael Lipsky, Protest in City Politics (Chicago: Rand McNally, 1970) argues that powerless groups can make themselves felt by protesting only insofar as they succeed in activating sympathies in more powerful members of the community, and his general theory is confirmed by his study of the New York rent strike. "Trust" probably provides a stronger argument than activation of sympathies for a rich man not to mistreat a poor man: although the poor man cannot inflict any real damage in return for mistreatment, the rich man acquires a reputation for mistreating people and this reputation makes other rich men wary of dealing with him.

¹³ See Henry Sidgwick, The Elements of Politics, 2nd edition, Chapter XIII and H.L.A. Hart, The Concept of Law, 89-96.

While use of legal processes reduces confusion, it is no guarantee of perfect communication. People often misunderstand judges. For example, Neal A. Milner, "Comparative Analysis of Patterns of Compliance with Supreme Court Decisions: 'Miranda' and the Police in Four Communities," Law and Society Review, 5 (1970), 119-26 reports police misunderstandings of the relatively explicit Miranda rule governing arrests.

¹⁴ The need for an arbitrator is the reason John Locke, Second Treatise of Government supposes governments were instituted among men. Even William Godwin, in the course of his discussion "Of the Dissolution of Government," concedes the need for juries to recommend certain methods of adjusting controversies without assuming the prerogative of dictating that adjustment"

(Enquiry Concerning Political Justice, Book V, Chapter XXIV).

¹⁵ David Hume, A Treatise of Human Nature, Book III, Part II, sec.VII attributes the success of small groups providing themselves with public goods to the success of "I will if and only if you will" mechanisms: "Two neighbors may agree to drain a meadow, which they possess in common: because it is easy for them to know each other's mind; and each must perceive, that the immediate consequence of his failing to do his part is the abandoning of the whole project. But it is very difficult, and indeed impossible, that a thousand persons should agree in any such action; it being difficult for them to concert so complicated a design, and still more difficult for them to execute it; while each seeks a pretext to free himself from the trouble and expense, and would lay the whole burden on others."

The modern classic in this area, Mancur Olson, Jr., The Logic of Collective Action, 22-35 recognizes that small groups tend to be more successful in providing themselves with public goods but offers a slightly different explanation. James M. Buchanan, "Ethical Rules, Expected Values and Large Numbers," Ethics, 76 (1965), 1-13 and Norman Frohlich and Joe A. Oppenheimer, "I Get By With a Little Help from My Friends," World Politics, 23 (1970), 104-20 are right to re-emphasize the importance of "I will if and only if you will" agreements in small groups. Similarly, William J. Baumol, Welfare Economics and the Theory of the State, 179 writes, "My reason for doubting the efficacy of automatically applied sanctions in a large group is that sanctions must by definition be applied when and only when the individual deviates from the course required of him. If the individual plays only an insignificant role, however, it is difficult to conceive of a slight change in the nature of his activities setting up significant reactions except as the result of consciously directed policy."

¹⁶ This emphasizes non-excludability as the defining characteristic of a public good. While this is a narrow interpretation of the economists' concept, it is faithful to current usage of the term in political science. See Mancur Olson, The Logic of Collective Action, 14 ff., and William J. Baumol, Welfare Economics and the Theory of the State. On "clubs", see James M. Buchanan, "An Economic Theory of Clubs," Economica, 32 (1965), 1-14; Mark V. Pauley, "Clubs, Commonality and Core: An Integration of Game Theory and the Theory of Public Goods," Economica, 34 (1967), 314-24.

Non-excludability is sometimes a function of the nature of a good; eg., it is impossible to protect the corner of 42nd Street and Fifth Avenue in New York City against a nuclear attack without also protecting that city's 43rd Street and Fifth Avenue. More often, however, exclusion is not technically impossible but only rather undesirable, uneconomic or infeasible. It is, for example, entirely possible to ex-

pel all members of the United Nations who fail to pay their dues, but doing so would defeat the purpose of the organization. See John G. Head, "Public Goods and Public Policy," Public Finance, 17 (1962), 197-219; Mancur Olson, The Logic of Collective Action, 14; and Olson, Assessing and Improving the "Quality of Life" (forthcoming).

17 See, eg., the proposals of Oscar Newman, Defensible Space (New York: Architectural Press, 1973).

18 These topics are discussed at length in Norman Frohlich, Joe A. Oppenheimer, Oran R. Young, Political Leadership and Collective Goods (Princeton: Princeton University Press, 1971) and more briefly in Richard Wagner, "Pressure Groups and Political Entrepreneurs," Papers on Non-Market Decision Making, 1 (1966), 161-70.

An adequate staff is, of course, only one of the resources that might be necessary to carry out any given task of government. Certain equipment (most notably the mimeograph machine) is also deemed essential in a wide range of cases; it would hardly make sense to talk of offering the mimeograph "selective incentives" for governmental service. Perhaps this condition could better be subsumed under the more general provision that a government cannot function adequately without adequate resources. To the extent that the resources in question (including the energies of public servants) can be exchanged for money, this amounts to the requirement of adequate funding.

19 The easiest way to achieve "respect for process" would probably be to give a single person or group ultimate responsibility for all the functions of government. But if the functions are to be shared among three Branches, as in the U.S., then some incentive structure (eg., "check and balances") will be required to guarantee this result.

20 See Hanna F. Pitkin, The Concept of Representation (Berkeley: University of California Press, 1967), Ch.9. Bentham, for instance, suggests that a legislature "will be the better... in proportion as its interest is similar to that of the community" ("Essay on Political Tactics," Works, ed. J. Bowring, II, 301; see also his "Constitutional Code," Works, IX, 63, 103, 118, 155). James Mill, Essay on Government (London: J. Innes, 1828) makes a similar suggestion.

PART III

NORMS OF POLITICAL MORALITY

Introduction

Part II has specified conditions under which Rational Men would behave cooperatively and coordinate their behavior. Part III supplements this by predicting the substance of norms governing cooperative behavior among Rational Men. The fundamental principles of political morality, the Aggregative, Works and Fairness Principles, are discussed in Chapter 5. The prediction is relatively precise and therefore easily tested. Familiar norms of political morality--political obligation, justice, equity, equality, freedom and rights--are scrutinized in subsequent chapters to see if they actually do reflect the fundamental principles that the Rational Man model predicts they will. The results of this examination tend to confirm the predictions of the model.

Looking at this enterprise the other way around, it is an attempt to explain the familiar principles of political morality in Rational Man terms. The precise explanation is complicated because it works through the intervening concepts of the Aggregative, Works and Fairness Principles. The basic form of such an explanation, however, is quite clear. Explanations of the rationality of the principles of political morality must involve the claim that the operation of those principles increase the likelihood that individuals will satisfy their wants.

This enterprise is crucial to the present task of expanding

the theoretical power of the Rational Man model of politics, but its significance transcends the present application. Discovering "fundamental principles" of political morality may help to illuminate the moral dimension of the everyday choices of real world actors, such as legislative draftsmen, constitutional engineers and conscientious citizens. High-flown abstractions of justice, equality, freedom and the like provide all too little concrete guidance even where they clearly are applicable. What is worse, it is intuitively obvious that considerations of political morality are involved in some political decisions (such as allowing environmental pollution) where none of these concepts seem to apply. The discussion of fundamental principles might help elucidate the practical implications of political morality.

In order to test the predictions of the Rational Man model concerning the substance of the norms of political morality one must first know what those norms are. To discover the content of those norms, the present analysis utilizes the techniques of linguistic analysis. This methodology might offend some social scientists given to knee-jerk empiricism, who would no doubt prefer to see survey research data used at this point. But linguistic evidence is perfectly satisfactory empirical data for the present purposes. Before norms can affect a man's behavior they must be communicated to him. All norms of political morality must be filtered through language before they can become operative. Examining the ways words are used in the process of this transmission

reveals the substance of those norms. (For present purposes it does not matter whether this substance is built into the meaning of the words themselves or whether it can only be inferred from the way the words are used in connection with others.) Analytic philosophers ordinarily suppose themselves to be working with empirical data in examining the "ordinary use" of words. J.L. Austin writes that, in searching for definitions, we "are looking not merely at words ... but also at the realities we use the words to talk about. We are using a sharpened awareness of words to sharpen our perceptions of the phenomena."¹ Admittedly, analytic philosophers have a peculiar way of obtaining their empirical data base, but survey research is quite unnecessary to discover the "ordinary use" of words because all speakers, the analyst included, share a common linguistic experience. The analyst is a competent as anyone else to reflect upon that experience and catalogue the "ordinary uses" of words. In this important way, analytic philosophy is social-scientific; or, rather, it works with empirical data that may be used for social-scientific research. Social scientists also have recognized that much behavior passes through a linguistic phase, and examining language can be a good way of examining the behavior. This realization is the keystone of one perspective on sociology (symbolic interactionist) and another social-scientific research technique (content analysis).²

Analytic philosophers might also wonder at the way in

which linguistic analysis is being utilized. The analytic philosopher is typically concerned with all the various applications of the word he investigates. The present analysis focuses more narrowly on the role of each concept in the moral language game, which is only one of several possible games in which it might figure. A concept is relevant to the present task only insofar as ordinary language suggests that the moral community would want the principle implemented in social policy. No concept in political morality (such as equality, freedom, etc.) is given unqualified approval, and these qualifications are very important features of the social norms to which the concepts refer. Ordinary language contains much information about the relative importance of norms and what would be regarded as permissible trade-offs between them, and the predictions of the Rational Man model must be tested against this data.

Examining the way words are used in moralizing about politics enables one to determine what norms are invoked in such discussions. That is not, of course, to suggest that social policy is always or even ordinarily guided by such considerations. Section 5-5 argues that in a world of men with unequal power the Rational Man model would predict some deviation from the distributive rules implied by the Works and Fairness Principles; and "do as I say, not as I do" is an unfortunately common plea in the empirical world. Nonetheless, it is important to explain in Rational Man terms the peculiar

force that these norms of political morality do seem to have in the empirical world.

NOTES

¹ J.L. Austin, "A Plea for Excuses," Proceedings of the Aristotelian Society, 57 (1956-7) 1-30 at 8. See also Austin, How to Do Things With Words (Oxford: Clarendon Press, 1962) and Ludwig Wittgenstein, Philosophical Investigations, trans. G.E.M. Anscombe (Oxford: Blackwell, 1958).

² On social interactionist theory see George H. Mead, Mind, Self and Society (Chicago: University of Chicago Press, 1934). On content analysis, see Harold D. Lasswell, Language of Politics, Studies in Quantitative Semantics (Cambridge: MIT Press, 1965).

CHAPTER 5: FUNDAMENTAL PRINCIPLES
OF POLITICAL MORALITY

This chapter discuss the fundamental principles of political morality. One is the Aggregative Principle, which is described briefly in Section 5-1. This principle directs maximization of the total amount of goods available to society as a whole. The others are distributive principles, the Works Principle and its remedial complement, the Fairness Principle, which are discussed theoretically in Section 5-2. Essentially, these principles direct that each individual is to prosper according to his own works. Section 5-3 considers how such distributive rules can be guaranteed in practice and concludes that, since no institutional arrangements are capable of offering such a guarantee, these principles must be pursued as norms of political morality. Section 5-4 argues that the Aggregative Principle and the distributive rules implicit in the Works and Fairness Principles are compatible; the distributive rules actually further aggregative goals, and maximizing the sum-total of good need not (except perhaps in the very short term) result in objectionable distributions. The attractiveness of these fundamental principles to Rational Men is demonstrated in Section 5-5.

5-1: The Aggregative Principle

The Aggregative Principle urges maximization of the total stock of goods available to a society as a whole.¹ It has two aspects. First, it directs that resources be utilized efficiently, that is to say, in such a way that as much good as can be produced is produced. Thus, this Principle urges a society to strive to operate on the Production Possibility Frontier at all times. Second, it holds that the expansion of the Production Possibility Frontier is itself a desirable social goal. The more goods possible for a society to produce the better off it is. It is important that "goods" be understood in the broadest possible sense to refer to all things that men want. The term is not confined to material goods or even to those aspects of well being ordinarily captured by GNP indices. Considering the wide range of goods such calculations neglect, it is likely that maximizing goods means something very different from maximizing GNP.

5-2: Distributive Principles: Works and Fairness

The fundamental distributive rule of a society of Rational Men is the Works Principle. According to this Principle, each individual should prosper according to his own works. The more good he produces the more he has to enjoy, and the more

harm he produces the less good he has to enjoy. The operation of the Works Principle is better understood by focusing on its remedial aspect, the Fairness Principle.

A claim of Fairness is invoked to protest at some people gaining at the expense of others. Circumstantial constraints on human action are such that occasionally one man can force others to bear the costs associated with activity profiting him, and other times one man's sacrifices benefit others. These circumstances offer men the opportunity to do violence to the Works Principle. Passing off costs onto others allows a man to gain more than he should; and if others siphon off some of the benefits due him then a man gains less than he deserves to gain. The Fairness Principle works to discourage men from taking advantage of such opportunities and to guarantee that men do prosper roughly according to their own works.

In its most general form, the Fairness Principle is a standard for appraising social allocation arrangements. The Fairness Principle starts from a hypothetical baseline in which no one's activities affect anyone else. This baseline is more than a useful analytic construct. It is neither necessary nor likely that such a state of affairs has ever existed.

Movements from that baseline are fair if and only if appropriate compensation is made. Each man is taken to be the sole authority on his own welfare. How much he lost only he can determine, and whether he has been adequately compensated

is likewise for him to judge. Two considerations are involved in the appropriateness of compensation, reflecting the two ways in which unfairness can come about. If one man's actions cause another to lose, the first must compensate the second for his losses. That is, the first must make payments to the second in an amount such that the second thinks he is at least as well off after being compensated as he was before the first man's activities caused him to lose. The purpose is to compensate the second man, not merely to deprive the first, and if there are several goods the second man agrees would be equally adequate compensation the first ought be allowed to choose which he will offer in compensation. If one man's actions benefit another, the beneficiary must repay his benefactor. That is, the beneficiary must make payments to his benefactor in the amount that the beneficiary thinks he gained from the action of his benefactor. Again, the purpose is not merely to penalize the beneficiary, and if there are several ways the beneficiary thinks equally appropriate to repay his benefactor the benefactor ought be allowed to choose among them.²

The point of the Fairness Principle is to evaluate an existing allocation of goods. An existing allocation is fair if and only if it embodies the distribution that would have resulted from fair movements from the hypothetical baseline. An actual history of fair movements is as unnecessary and as irrelevant to the Fairness of a distribution as is the histor-

ical implausibility of the hypothetical baseline. Both are simply analytic constructs useful for evaluating a distribution. All that matters for the Fairness of the arrangement is that it is the distribution which would have resulted from fair movements from the hypothetical baseline, not that it did as a matter of historical fact result from such movements from such a baseline.³

The Fairness Principle is an attempt to supplement the famous optimality criterion of Vilfredo Pareto. A change is a Paretian improvement if it makes at least one person better off while making none worse off. Pareto optimality is achieved when all possible Paretian improvements are made. This Paretian criterion is a necessary but not a sufficient condition of fair changes from the hypothetical baseline situation. A movement from the baseline is fair only if all gainers adequately compensate all losers, so after fair compensation is paid losers will be exactly as well off as before; and no rational man would initiate such a change unless he will have some of his gains left after fairly compensating losers. Thus, it is a necessary condition of Fairness that changes from the hypothetical baseline be Paretian improvements. (This applies only to changes from the hypothetical baseline, not also the status quo, which is discussed below.)

The Paretian criterion leaves too much latitude in the distribution of goods for it to constitute a sufficient condition of Fairness. An example best demonstrates this point.

Suppose Albert's only neighbor for a mile, Bernard, is inclined to keep poultry in his back garden. Their value at slaughter is £50, of which £20 is required to compensate Bernard for the expenses of raising them (feed, shelter, etc.); and another £10 is needed to compensate Albert for the noise of roosters crowing at dawn and the stench the winds carry his way. Now, no matter which of them gets the remaining £20, Bernard raising poultry is Pareto-superior to Bernard not raising poultry so long as Bernard gets his £20 and Albert his £10. The more specific Fairness Principle, motivated as it is by the sentiment that men ought prosper according to their own works, dictates that the £20 remainder ought to go to Bernard. But on Paretian grounds there could be no objection to giving all or most to Albert.⁴

At first brush it might seem that the notion of compensation is the real workhorse in the Fairness Principle and the hypothetical baseline is an unnecessary appendage. The function and importance of that baseline is clearest when its compensation requirements are contrasted with the Compensation Principle offered by Nicholas Kaldor and endorsed by John Hicks. The basic form of the Kaldor-Hicks Compensation Principle is the following criterion: a change is an improvement if and only if those who gain from it could more than compensate those who lose by it. Whereas Fairness requires compensation actually be paid, Kaldor-Hicks consider a change an improvement merely if gainers could compensate losers whether or not they actually do so.⁵

Kaldor's hesitation to insist on actual as well as potential compensation is rather a weak response to quite telling potential objections. The hypothetical baseline is designed as a more adequate counter to such objections. The first objection is that, had Kaldor included a requirement that compensation actually be paid, he would be unjustifiably sanctifying the present distribution of wealth.⁶ In general, the function of compensation is to restore some antecedent distribution of goods that has been upset. Since Kaldor works from the present distribution and assesses proposed changes in the status quo with the Compensation Principle, to require compensation actually be paid would amount to an insistence that the present distribution be preserved.⁷ The problem with this is that it is highly arbitrary to approve the present distribution for no more reason than simply that it is the one which presently exists. Even if the present distribution happens to be justified on some plausible criteria, it is quite unlikely that the existing distribution will always be laudable at all times and in all places. Kaldor, anxious to separate aggregative from distributive issues, responds to this potential objection by refraining from actually demanding compensation be made for changes from the status quo.

The Fairness Principle is saved from the problems Kaldor must face by the hypothetical baseline. Compensation requirements will always work to preserve whatever distribution is in existence at the time the requirements go into effect.

Kaldor hopes to evaluate movements from the status quo, and were he to require compensation he would enshrine any unjustifiable distribution it happens to embody. In contrast, the Fairness Principle is quasi-retroactive, and it works to preserve a distribution adjudged laudable on the criterion of the Works Principle. This Principle picks out the hypothetical baseline (in which no one's activities affect the welfare of anyone else) as embodying an especially appropriate distribution of goods. Compensation requirements in the Fairness Principle work to preserve this desirable distribution.⁸

A further objection to compensation requirements in general is that it is unreasonable to compensate men for sacrificing what they should not have had or used anyway. Specifically, we ought not reward a man for relinquishing powers to make another man worse off.⁹ The standard example involves the gunman offering the banker the option, "Your money or your life." It is commonly (but erroneously) supposed that the gunman is suggesting a Paretian improvement, since the banker would rather have his life than his money under these circumstances and the gunman is better off with the banker's money than without it. Actually, it is not a Paretian improvement because the thief is really only offering the banker a choice between two ways of being worse off, not a way of being better off. The telling point comes after the banker has handed over his case. Then it is non-optimal on either the Paretian and Kaldor-Hicks criterion for the thief to return the money, because (assuming money has the same

utility for each of them) to do so would make one man worse off in exactly the same amount the other is made better off.

The Fairness Principle avoids the counter-intuitive consequences of other optimality criteria with the assistance of the hypothetical baseline. It requires compensation only for movements from a baseline in which no one's activities affect anyone else. The baseline both avoids the need to compensate the gunman for his "sacrifice" of the opportunity to kill the banker and actually requires repayment of the stolen cash. It is the gunman who proposes to move away from the baseline, either by taking the banker's life or his money, so it is the gunman who must fairly compensate the banker (or his widow) for making him worse off by moving away from the baseline.¹⁰

5-2-a: Joint Enterprises

Joint enterprises present a special case for application of the Fairness Principle. In its general form, Fairness only requires a man be restored to the state of well being he enjoyed before the intrusion of others. Something more must be said to apply that Principle to cases of joint enterprises wherein several men combine their efforts to produce goods to be divided among them. The general statement of the Fairness Principle does offer two bits of important guidance. First, it insists that the benefits of the joint enterprise should be enjoyed only by the partners who combined their

sacrifices to produce it. If there are spill-overs and others benefit from their sacrifices, these extraneous beneficiaries must repay the partners whose original sacrifices produced the good they enjoy. Second, the general form of the Fairness Principle requires that all the original partners' original investment (i.e., sacrifices) be repaid out of the products of their joint investment before any of the partners receives more than he invested.

This advice is indeterminate, however, because it might not dispose of all the products of joint endeavors. Rather frequently, the value of goods produced exceeds original investments, so there are some goods left over after the fair compensation has been made. Here the Works Principle simply expands upon the non-exploitation rule of Section 3-6. Non-exploitation merely dictates that each member of the coordinating coalition must be better off inside the coalition than he would have expected to have been outside it. This fixes the distribution of some of the advantages secured by the coordinating coalition but not all of them.¹¹ The Works Principle goes further to guide the distribution of this surplus, directing that the surplus be divided among the partners producing it in relation to the magnitude of each partner's contribution.¹²

This general principle is clear enough, but its application can be quite difficult. It is important to recognize the wide variety of ways in which a contribution might be made,

and some of the more obvious ways of measuring the relative magnitudes of the contributions of two men are likely to result in quite serious errors. One special caution in measuring an individual's contribution to a joint enterprise is that the size of his direct payment (eg., the amount of cash he puts into the common fund) is a very incomplete indicator of his real sacrifice. In addition to his direct payment, a man also forsakes opportunities to do other things with his resources. Any adequate accounting of a man's sacrifices to the joint enterprise must therefore include his "opportunity costs," expressed in terms of his next most profitable use of the resources. One man might actually invest only £10 in the joint enterprise but forgo an opportunity to do something that would (1) block the joint enterprise and (2) pay him £1000; his real sacrifice is much greater than a man who actually contributes £100 in cash but whom the alternative to the joint endeavor promises only £500. Since the first man sacrificed more in order that the joint project be made possible, he fairly deserves more compensation for his sacrifice and a larger proportion of whatever surplus remains after all have been compensated. The principle of opportunity costs is best demonstrated by reference to money, but sacrifices of opportunities to exercise power (except, of course, power to harm others) ought be figured in the identical way.

The generality of the Fairness Principle must be emphasized. It does not commit one to any particular political ideology, and as a result it can explain the claims of many.

Proudhon based his mutualism on the argument that labor's contribution to the production of a good is systematically underestimated and as a result labor is unfairly deprived of its proper share of the products of joint enterprises.¹³

The question is not simply one of how to assess the relative importance of labor and capital; even orthodox Marxists cannot deny that capital as well as labor adds something to the final product. The conflict ultimately turns on the legitimacy of property right, that is, whether some owner of the capital deserves to be rewarded the contribution of capital. If instead capital belongs to a cooperative embracing all laborers, then they share its proceeds among themselves. The Fairness Principle is, at least in principle, silent on the issue of property rights and consequently quite incompatible ideologies can be seen as manifestations of the Fairness Principle.¹⁴

5-2-b: Public Goods

Applying the Works Principle to joint enterprises, two variables are involved. This Principle requires that rewards be commensurate to contributions, and either can be varied to achieve the goal. The ordinary way to achieve an appropriate distribution is to vary the amount of goods an individual receives according to his contribution to the production of those goods. Sometimes, however, products of joint enterprises cannot be divided into parcels and allotted differentially

to individuals according to their contribution. The impossibility of exclusion characterizes a "public good": if any one man enjoys a public good then some or many others must enjoy the same good as well. Where, as with a public good, distribution is fixed, an appropriate distribution can be achieved by varying the contribution to be exacted from each of those who will enjoy it.

Philosophers have discussed the Fairness Principle at some length in this connection. Fairness, they suggest, requires that there be no "free riders" enjoying a public good made possible exclusively through the contributions of others. In his classic statement of the principle, C.D. Broad focuses on a situation in which "goods are of such a kind that they must be enjoyed by a group not necessarily identical with the group of producers"; in such circumstances, fairness dictates "that the best distribution is one in which producers and enjoyers of a certain good are identical." Broad's words are echoed by more recent philosophers, including A.C. Ewing, John Rawls, David A.J. Richards, and David Lyons.¹⁵

The philosophers are certainly right so far as they go. Fairness undoubtedly requires that those who are destined to enjoy a public good must contribute something to its production. Problems also arise in determining how much they must fairly contribute. It would be unfair to make all pay equally because, while each man will enjoy the same good, their different tastes make it unlikely that all men will derive the same enjoyment

from the same good. The general requirement of Fairness in such circumstances is clear enough; those who will enjoy the good more ought contribute relatively more to its production. Difficulties arise only with respect to implementation of this general principle.

It is extraordinarily difficult to force individuals to reveal truthfully how much they will enjoy a public good. If many individuals are involved and if, as Fairness dictates, their contributions are to be figured according to how much they will enjoy the good, then each man has a motive for understating his liking for the good. His contribution is small in relation to the total, so the amount of the good produced will not be noticeable smaller because of his underestimation; and he gains a good bit because he is assessed a smaller portion of the costs of producing the good. With everyone understating his liking for the public good, the good is either not provided at all or insufficiently provided. Methods for controlling such misrepresentation of preferences are treated in Section 5-3.

5-3: Fairness in Practice

One institution which goes some way towards guaranteeing implementation of the Fairness Principle is the economic market. Under idealized market conditions, an exchange economy can operate very nearly according to the Fairness Principle. The ideal conditions, however, are grossly unrealistic. Owing

either to the nature of the good or to the state of legal institutions or to both, some goods escape the operations of economic markets. Such extra-market goods are called "externalities."¹⁶ An "external economy" exists whenever one man's activities confer benefits on another such that the second is not forced to purchase the benefits from the first; and an "external diseconomy" exists when one man's actions impose costs on a second man such that the first is not forced to compensate the second for his losses. The workings of a market might contribute to implementation of the Fairness Principle, but market mechanisms must be supplemented if that Principle is to be rigorously enforced.

Adjusting political institutions so they will force people to be fair is a rather unpromising strategy. The most obvious political device would be a law requiring Fairness be achieved. Perhaps this law could both impose duties on men in their dealings with one another and function as a constitutional test of legal validity of all other enactments, so a statute would not be legally binding unless it promotes Fairness. The danger of individuals misrepresenting their preferences, however, cautions against any such attempt to enact the Fairness Principle itself directly into law. Central to that Principle is the notion that the individual is the only one who can judge his own preferences. A corollary is that, if a man loses by the actions of others, only the loser can say how much he lost and what it takes to compensate him for

his losses. Now, compensation is a relatively precise requirement that the man can be restored to the same state of well being he enjoyed before others acted to his detriment. But since the loser himself is the only authority on his preferences, he is tempted to overstate his losses and understate his liking for the goods offered in compensation hoping to get more than would really be necessary to compensate him for his losses.

Self-corrective mechanisms are at work within economic markets discouraging misrepresentation of preferences. A man can always put an inflated price on his goods, claiming that nothing less than some outlandish amount would pry them from him. In so doing, he faces the danger of being stuck with the goods. That is, others might take his demanded price seriously, and since they are unwilling to pay that price, an exchange that both would have preferred to the status quo will have been prevented by the man's misrepresentation.¹⁷

However useful in everyday economic relations, the market's self-corrective mechanisms are insufficient to check all misrepresentations of preferences involving externalities. One difficulty, already mentioned in relation to public goods, comes when the undesirable consequences of misrepresentation are the joint products of many individuals' exaggerations. Self-corrective market devices work because the liar alone produces the impediment to desirable exchanges and he alone

can single-handedly remove it by telling the truth. But some of the undesirable consequences caused by misrepresenting preferences when it comes to externalities, such as the inadequate provision of a public good, result from the exaggerations of many individuals, so no single individual could remedy the situation by correctly stating his preferences. Another limitation of the market's technique for controlling misrepresentations is that it presupposes before-the-fact consultation. The market's check is that two men might not reach an agreement for a mutually beneficial exchange because one or both misrepresent their preferences. Externalities, unlike exchanges, are sometimes inflicted first and followed by consultation. The drunk driver hits the oncoming car and only then starts discussing with its driver costs of the repair, hospital bills and "mental anguish." Where consultation is after-the-fact, the market's check cannot work to prevent misrepresentation of preferences.

Misrepresentation of preferences can be discouraged, but the method of controlling it does not lend itself to being enacted into law. What keeps a man from misrepresenting his preferences, and what allows others to challenge him when he does misrepresent them, is his own history of choices. In making his past choices among goods a man revealed his preferences, and if his present claims are contradicted by his past choices then he is probably exaggerating his claim to compensation. The most telling evidence of misrepresentation, for

example, would be that recently the man himself freely agreed to exchange the same amount of the thing others caused him to lose for the same amount of goods they offer in compensation. The difficulty of this method of discrediting exaggerated claims is that such decisive evidence will rarely be available. Instead, the challenger will have to rely on presumptions of transitivity of the man's preferences ("If you prefer A to B and B to C, then surely you must prefer A to C") and on the continuity of the man's preferences over time. A law could possibly direct a judge or jury to undertake such an examination of a man's past choices to test his claim to compensation, but it seems inappropriate to give judicial bodies so much license to exercise intuition with so few and such imprecise guidelines. The Fairness Principle might best be used as Bentham used his utility principle, as an extra-legal standard for assessing social arrangements which cannot itself be enacted into law.

A second political guarantee of fair dealings is equally unsatisfactory. Public choice theorists have a peculiar and long-standing preoccupation with the quest for social decision procedures guaranteed to produce outcomes they desire. Although some have been proposed, none can guarantee fair outcomes. One of the larger themes of this essay is that public choice theorists might focus less on social decision rules and look more to other forms of social control (such as moral norms) that men might choose to guarantee more certainly outcomes they desire.

The decision rule of unanimity is the favorite of those hoping to produce outcomes resembling fairness. For taxation policy decisions, Knut Wicksell proposes combining into a single package public expenditures and taxes required to finance them, and each package would then be subjected to a vote in which unanimous approval is required for passage. If the package would cause any individual to pay more in taxes than he thinks the goods he would receive would be worth to him he can vote against the package. This will force adjustments in the package until it meets with everyone's approval, in which case it must be an improvement for all taxpayers. Extending the unanimity decision rule beyond taxation policy, Buchanan and Tullock argue that the rule would have equally happy consequences (were it not for bargaining costs) when applied to all social decisions.¹⁸

The unanimity rule can guarantee Paretian improvements on the status quo, but as already discussed every Paretian change is not necessarily a fair movement. Furthermore, the unanimity rule does not necessarily ensure a start from anything resembling the hypothetical baseline. Wicksell's proposal does provide a hypothetical baseline of sorts within the taxation subsystem, because until a package has passed the vote no one is taxed and no one provides public services. Wicksell offers a fair hypothetical baseline within the taxation subsystem, but he cannot (and he does not) overlook the fact that there are other elements comprising the total social

system in which the taxation subsystem is set. Other segments of the total system might be unfair, and taxes may be used to remedy unfairnesses external to taxation policy itself. To insist on strict Fairness in the taxation subsystem while it is lacking in the rest of the system is likely to lead to suboptimization; and it runs directly counter to the economic theory of the second best, which suggests that if in the best world three conditions hold it is unlikely that the second best world is one in which two of the three hold.¹⁹ Wicksell was careful to avoid these errors, but Buchanan and Tullock ignore his wise cautions. They simply start at the present and require compensation for any movement from it, without giving a thought to the need for a hypothetical baseline. Should an unfairness exist in the status quo from which they start (and they cannot guarantee none will exist), then the unanimity rule certainly cannot guarantee it will be eliminated. On the contrary, the rule actually guarantees perpetuation of such unfairnesses as exist in the initial situation. A man polluting the air when the unanimity rule goes into effect, for example, can use the veto ~~that~~ rule gives him to block any attempts to make him stop or even to make him compensate those he unfairly harms.²⁰

Social morality is a neglected but nonetheless quite an important social control mechanism. It is at a disadvantage with respect to economic, legal and political mechanisms because it requires more strenuous individual efforts at en-

forcement. But these other mechanisms either operate imperfectly or cannot work at all to implement the Fairness Principle. Social morality can be used to implement that Principle, and it is the argument of the balance of Part III that Anglo-American norms of political morality do precisely that.

A final point remains regarding the details of mechanisms to implement the Fairness Principle. The costs of using the Fairness standard to evaluate social allocation arrangements depends on how often one tallies up the balance sheet to see if everyone has been adequately compensated for movements from the hypothetical baseline. The exorbitant costs of unanimity, which figure so largely in Buchanan and Tullock's writing, result from the requirement that compensation be made after each instance of movement. Costs of applying the Fairness Principle can be cut, at no cost to the Principle, in two ways. The first is to include several movements in a single compensation calculation. Wicksell, for example, would join issues of increases in state educational expenditures, roadbuilding and national defense in a single decision. A second cost-saving device is to extend compensation questions along a time dimension. What strikes us as fair about a random procedure (such as flipping a coin) is that it ensures a fair distribution of gains and losses over a period of time when the thing to be shared cannot be divided and allocated fairly at each moment in time. The Fairness Principle can be im-

plemented in this way so long as each of the rewards thus distributed is relatively small or, alternatively, large rewards are frequently allocated in this way. Combining these two cost-cutting methods, the costs of applying the Fairness Principle can be reduced significantly.²¹ The combination suggests that the Fairness Principle will function as a back-of-the-mind standard saying that some people should, on balance, profit more than others from a particular policy either on account of their historical unfair deprivation or their present unfair losses in some other policy area.

5-4: The Compatibility of Aggregative and Distributive Principles

This section demonstrates that adherence to the distributive rules discussed in Section 5-2 necessarily contributes to the realization of aggregative goals. The converse is not necessarily true. A state of society might be laudable on the grounds of the Aggregative Principle without automatically satisfying the requirements of the Works Principle.

In a society operating under distributive rules implied by the Works Principle, Rational Men will use existing resources efficiently and will also strive to expand the existing production possibility frontier. That is to say, they will act in accordance with the Aggregative Principle. This occurs because the Works Principle of distribution offers each individual an incentive for producing as much good as he

can. Anyone who can produce more good will do so because it benefits him, both by increasing the total amount of goods to be allocated among members of the society and by increasing the fraction of those goods awarded to him under the allocation formula implicit in the Works Principle. The former is likely to be more attractive for men in small groups whereas the latter will be more attractive to members of large groups. (No one rationally provides a public good such as a larger total of goods for a large group without "selective incentives" differentially rewarding him for so doing; a larger share is the requisite incentive in this case.) But large group or small, implementing the Works Principle stimulates each individual to produce as much good as he can. The implication for the society at large is that it operates efficiently, i.e., on the existing production possibility frontier; and the production possibility frontier is continually expanding, largely because the Works Principle offers individuals incentives for investing in research and development of new technologies.

One particular contribution of the Fairness Principle toward the achievement of technical efficiency, the internalization of externalities, deserves special attention. For those goods bought and sold in perfectly competitive economic markets, an individual attempting to maximize his own profits produces socially optimal results. Competitive markets without externalities prod individual producers to invest their resources in the most efficient way because that is also the most

profitable way to invest. The distribution might be objectionable, but at least there is no way to use available resources to produce more goods of one sort without consequently reducing the amount of some other good being produced. An individual profit-maximizer consciously strives to produce as much as he can of what others want most because, quite simply, they will pay him most for such goods. To maximize his profits, he tries to produce as many of them as he can with his limited resources, which means he seeks the least costly way of producing them. Under these special conditions, the "invisible hand" does guide profit-maximizers to behave in socially efficient ways.

Externalities upset this mechanism by introducing goods which are not bought and sold. By definition, external economies are benefits which the activities of one man create for another man but which are not sold to the other. Instead, they are conferred gratuitously on him. A Rational Man considers only his own profits and losses in deciding how to invest his resources. Occasionally the course of action most profitable for him also produces external economies for others, but inevitably he produces less external economies than would be optimal for society as a whole. Suppose, for example, that Jason can invest a set of resources in either Plan A or Plan B; and Plan A produces x goods, all of which Jason himself enjoys, and Plan B produces $x + \epsilon$ goods, some of which Jason enjoys and some of which are external economies

enjoyed by others. If the external benefits are a sufficiently large proportion of the total ($> \epsilon$ in this case) then Jason, being a Rational Man, opts for the socially inefficient Plan A. Similarly, external diseconomies often offer a Rational Man the opportunity to force others to bear some of the costs of his activities which he would otherwise have to pay. Rational Men will take advantage of such opportunities and produce more external diseconomies than would be socially optimal. If Jason can perform the same activity paying him the same gross gains through either Plan A (involving costs of x to Jason and no external diseconomies) or Plan B (involving costs of $x - \epsilon$ to Jason and external diseconomies totalling 2ϵ to others), then Plan A is socially optimal but Jason would choose Plan B. The effect of externalities, then, is to skew individuals' resource allocation decisions so as to produce less external economies and more external diseconomies than would be socially optimal.²²

R.H. Coase argues that, in a world of perfect information, perfect competition and zero transaction costs, these effects would be overcome through a series of bribes. Efficiency is achieved because those who would enjoy the external economies can bribe people to produce them and those suffering from external diseconomies can bribe producers to cease. Indeed, if they cannot afford to make such bribes then the production of the externalities must be socially optimal.²³

It is not altogether clear what is gained by discussing

such a fanciful world. The three conditions are rarely if ever satisfied in the real world, and where they are not the existence of externalities does skew individual resource allocation decisions. Even under the ideal conditions Coase posits, however, his Theorem is valid only in the short term. In the long run, resource allocation is still skewed. Since collecting bribes to cease producing external diseconomies is profitable, Rational Men are encouraged to invest more than is socially optimal in activities generating such costs.²⁴

Enforcing the Fairness Principle contributes to the attainment of efficiency by forcing an individual to internalize externalities. Fairness makes him bear the costs of his own production in requiring he compensate others for external costs he imposes on them in the amount they think they lose as a result of his activities. And it assures him that he will benefit from external economies he produces for others by requiring that his beneficiaries repay him in the amount his activities caused them to gain. Fairness prompts a man to make his decisions as if he were himself paying all his production costs because he will, either directly or in compensation, and as if he receives all the benefits of his production because he will, either directly or in repayment. The Fairness Principle removes the skewing effects of externalities on the decisions of Rational Men.

The distribution rules involved in the Works and Fairness Principles necessarily contribute to the satisfaction of the

Aggregative Principle, but the converse is not the case. It is not a necessary truth that a course of action maximizing the total amount of goods available to a group as a whole will also necessarily entail a laudable distribution of goods among the members of that group. Sometimes the action plan does not entail any particular distribution at all, and other times it might actually entail an onerous one. In the former case, pursuing the Aggregative Principle might not entail a fair distribution but neither does it preclude it. Even in the latter case the unfairness can be soon rectified (by, eg., a lump sum transfer) without damage to aggregative goals. If each man's fair reward is a sufficient incentive to spur him to produce as much good as he can then taking any excess awards away from him will not significantly diminish his motive for producing as much good as he can. Thus, while pursuit of the Aggregative Principle does not necessarily guarantee fair distributions, neither does it necessarily preclude such distributions. And since fair distributive rules further the Aggregative Principle, there are good reasons on the grounds of that principle itself to establish fair rules.

5-5: The Rationality of the Fundamental Principles

In evaluating social rules, a Rational Man looks exclusively to the magnitude of the allocation of goods he expects the rule to award to him. The more goods the rules give him the better he likes them. Where his choice of rules

will be decisive (i.e., whatever rule he favors is certain to be implemented), he chooses under conditions of certainty and bases his preference on a simple comparison of the amount of goods each rule would award him. Under more typical conditions of uncertainty, he chooses rules on the basis of expected utilities reflecting the relevant probabilistic considerations (the probability the rule will be implemented if he chooses it; the probabilities of rule R giving him allocations x , y , z etc.).

Rational Men will strive to organize their social life around the Aggregative Principle only insofar as aggregative issues are divorced from distributive ones. In the most extreme instance, men must evaluate alternative courses of action without being able to foresee the distributive consequences of the alternatives and without being able to prearrange the division of goods to be produced. Under these circumstances, Rational Men would opt for the largest possible total of goods for the group as a whole on the supposition that the larger the total the better each man's chances of receiving a larger allocation for himself. The crucial assumption is that, in the long run, distributive anomalies will balance each other out. This is particularly plausible so long as only relatively small amounts of goods are distributed in this haphazard way and such distributions occur relatively frequently. In any case, there is no other basis upon which Rational Men can make decisions where they must

make aggregative decisions in complete ignorance of distributive implications.²⁵

Under weaker conditions of uncertainty about distributive consequences, the tastes of Rational Men for the Aggregative Principle would be conditioned by their tastes for risks. Suppose that each man knows how goods will be allocated among individuals who come to occupy each role and that he is uncertain as regards the role which he will himself occupy. Then an individual will opt for the course of action promising maximal total goods to the group as a whole if and only if he is risk-neutral. If he is averse to taking risks he will weight more heavily the roles of those who would be relatively less well off. If he likes taking risks he will weight more heavily the roles of the relatively better off. How heavily he weights these in each case depends on the strength of his taste for risks.²⁶

Arguments for the Aggregative Principle presuppose an atypical degree of uncertainty. Ordinarily men can foresee the distributive consequences of alternative courses of action. More important, they can usually prearrange a distribution of the goods to be produced. •

In a world of equally powerful Rational Men, the choice of a distribution rule is virtually certain to be a "second best" problem. Each individual must know that his best possible worlds (where he receives the preponderance of goods) are impossible by reason of the opposition of those whom such

rules would disadvantage. Thus, the only rules that stand any chance of being generally accepted are "second best" from the point of view of all concerned, and if everyone is equally powerful only those rules which are generally accepted stand any chance of being implemented.

When equally powerful Rational Men have the opportunity to predetermine the distribution of goods, they will do so according to the distribution rule implicit in the Works Principle. They do so because such a rule offers each individual as much as he can realistically expect to receive over the long run. This fair rule rewards each individual according to his works. Any rule allocating one man more than his fair share must necessarily allocate someone else less goods than he is responsible for producing. Such unfair rules would have two effects. Those who would be disadvantaged by them would oppose these rules, thus imposing conflict costs on the advantaged parties and diminishing their gains. Since everyone is equally powerful, no one could realistically expect to be able to impose distribution rules more than marginally more favorable to him than the fair rule. After deducting the costs of fighting, the marginal gain is likely to have become a net loss. In these circumstances, conflict-avoidance is a coordination problem as discussed in Section 4-1-a. Furthermore, those who receive less than their fair share would have less incentives to produce as much good as they could and, as a result, they will produce less goods.²⁷ Those who are unfairly advantaged might have a larger fraction of the total,

but the total itself is shrinking. Their larger proportion is (at least in a world of equally powerful men) likely to amount to absolutely fewer goods than they would have received under fair distribution rules.²⁸

These motives for distributive fairness are reinforced by the uncertainty attending the unraveling of the web of social arrangements which would result from unfair behavior. Although the Works and Fairness Principles might be reflected in legal rules, they essentially function as moral norms. As such they are enforced through the social process of mutual adjustment discussed in Chapter 4. Central to that process is the principle that when one man departs from the coordinated solution (in this case, the fair distribution) he acquires a reputation as an untrustworthy character. Being unable to trust him, it costs others more to deal with him. They avoid dealings with him if they can and deal cautiously when they must, and both penalize the defector. Therefore, a man must also consider these wider consequences when deciding whether to attempt to secure more than his fair share.

By their nature, these costs are difficult to predict. One knows that **his** reputation will be damaged and he will suffer some losses as a result, but he cannot foresee how many interactions will be influenced (how persistent the influence will be) or how severe the losses will be. He does, however, know that while his reputation is tainted the interactions to which he is a party will involve less total goods for participants

as a whole than they would have involved had his reputation not been tainted. If he is to do as well as he would have done accepting his fair share, then, he must receive a larger fraction of the total. Much uncertainty is inherent in such situations; parties cannot plan the disintegration of cooperative social ventures in the ways they predetermine the details of establishing cooperative enterprises. But in a world of equally powerful men no one can realistically expect to receive the preponderance of goods with consistency.

It can only be said with confidence that Rational Men of roughly equal power will find fair distribution rules attractive. Where everyone is equally powerful no one could realistically expect to impose rules more than marginally more favorable to himself, and those gains would likely be offset by others' diminished productivity and the costs of fighting to impose the rules. If, however, a few men are very much more powerful than all others, then they can realistically expect to be able to impose much more favorable rules. So long as their power is generally recognized, there will be no challenge to the imposition of the rules. Furthermore, very powerful men (if they are not too numerous) might be able to increase their fractions of the total by even more than productivity declines.

A few men who are much more powerful than all others might even be immune to the effects of unravelling of social arrangements. A man will be unaffected if he can persuade those whose future cooperation he requires (predominantly other

powerful men) that he will treat them fairly although he treats powerless men quite unfairly. In any case, it is likely that a very powerful man will be able to secure a sufficiently large fraction of the goods of the group as a whole to offset the impact of the diminishing size of the total stock.

If power is dispersed in widely varying quantities throughout the population it will be more difficult for a moderately powerful man to treat some men unfairly and still to protect himself from the consequences of the unravelling of social arrangements. In such a society the distinction between powerful and powerless men is ambiguous and as a result it is more difficult for a man to persuade powerful men whose cooperation he requires that he only treats powerless men unfairly. Even moderately powerful men would be forced to treat virtually everyone more-or-less fairly to demonstrate to those whose cooperation he requires that he will treat them fairly. This is probably the rationale that produces most adherence to the Works and Fairness Principles in most actual societies.

NOTES

¹ The Aggregative Principle specifically and the aggregative/distributive classificatory scheme generally is inspired by Brian Barry, Political Argument (London: Routledge and Kegan Paul, 1965). See Mancur Olson, Assessing and Improving the "Quality of Life" on deficiencies of GNP calculations.

² Notice this avoids the need for interpersonal comparisons of utility. An individual need only compare his present well-

being with that he enjoyed at some previous time. There is no need for him to compare his well-being with that of any other individual.

Some doubt the propriety of basing moral principles on wants at all. The argument is the interpersonal utility problem carried to its illogical extremes, the allegation that one man's wants are not "intelligible" to another. A man's desires are such a private thing that his statement of his wants will strike another person as nonsensical. See Richard Norman, Reasons for Action (Oxford: Blackwell, 1971); and C.C.W. Taylor, "Understanding a Want," The Business of Reason, ed. J.J. Macintosh and S. Coval (London: Routledge and Kegan Paul, 1969), 244-61. The question surely is how intelligible we need one man's wants to be to others. If we need empathetic understanding, then something resembling the interpersonal utility problem is involved. Indeed, A.K. Sen, Collective Choice and Social Welfare (San Francisco: Holden-Day, 1971) suggests "putting yourself in the place of the other" as a way of making interpersonal comparisons of utility. Fortunately, all that is necessary for wants to be intelligible to others is that everyone has wants and knows what it is to want something. See A.J. Watt, "The Intelligibility of Wants," Mind, 81 (1972), 553-61.

Philosophers have long worried with the problems of how to take into account different tastes in their moral theories. Bernard Shaw responds to one early moral norm by admonishing, "Do not do unto others as you would have them do unto you-- their tastes might be different" (Preface to Man and Superman). R.M. Hare faces similar problems in his Freedom and Reason (Oxford: Clarendon Press, 1963) with his universalizability test of moral propositions; he gets out of it only by asking a man whether he is willing to universalize the principle that all ought ignore the preferences of others. Fairness is a more plausible way to take into account different preferences.

³ Obviously, there are some problems knowing what people would have chosen if they never had the chance.

⁴ While in this example ordinary practice mirrors the requirements of Fairness, the possibility of Albert making off with nearly all the profits should not be regarded as entirely fanciful. If they lived inside city boundaries and if zoning regulations prohibit raising of livestock, Albert could (unfairly) demand most of the surplus as his price for not informing the authorities. Such a demand is unfair because it takes only £10, not £30, to compensate him for his losses.

It is important to suppose that only Albert lives near enough Bernard to be affected by his poultry raising activities. If two others suffered identically with Albert, Bernard would have to pay them £10 each in compensation for their losses; if a third suffers identically, Bernard could not compensate him out of the surplus. Indeed, the logic of municipal zoning ordinances prohibiting livestock raising is that the density of

urban populations guarantees that so many people would suffer from raising livestock inside the city that its costs would nearly always outweigh its benefits and the owner could not profit after compensating all the losers.

⁵ Vilfredo Pareto, Manual of Political Economy, trans. Ann S. Schwier (New York: A.M. Kelley, 1971); Nicholas Kaldor, "Welfare Propositions of Economics and Interpersonal Comparisons of Utility," Economic Journal, 49 (1939), 549-52. The Kaldor Compensation principle is endorsed with modifications by John R. Hicks, "The Foundations of Welfare Economics," Economic Journal, 49 (1939), 696-712, and Tibor Scitovsky, "A Note on Welfare Propositions in Economics," Review of Economic Studies, 9 (1941), 77-88. Scitovsky insists on the especially important condition of reversability, i.e., that once the chance occurs a move back to the status quo ante would be non-optimal. For political and philosophical perspectives on the Principle, see James Coleman, "Beyond Pareto Optimality," Philosophy, Science and Ethics, ed. Sidney Morgenbesser et al. (New York: Macmillan, 1969), 415-39; and Nicholas Rescher, Distributive Justice (Indianapolis: Bobbs-Merrill, 1966), 12-18.

⁶ T. Scitovsky, "A Note on Welfare Propositions in Economics," writes, "Favoring an improvement in the organization of production and exchange only when it is accompanied by a corrective redistribution of income fully compensating those prejudiced by it might seem to be a way out of the difficulty, because such a change would make some people better off without making anyone worse off. Yet, in a sense, such propositions are not independent of value judgements between alternative distributions either. For, going out of their way to preserve the existing distribution of income, they imply a preference for the status quo."

⁷ This explains the attraction that compensation principles hold for such political conservatives as Milton Friedman, Capitalism and Freedom (Chicago: University of Chicago Press, 1962) and Buchanan and Tullock, The Calculus of Consent.

⁸ This discussion is couched in terms of Fairness as between individuals, but it should be emphasized that it applies equally forcefully to groups. If a group provokes movement from the hypothetical baseline which harms an individual, then Fairness dictates that the group must compensate the individual. The burden of compensation payments should be shared among members of the group in proportion to the benefits each received as a result of the movement from the baseline.

⁹ R.B. Braithwaite, Theory of Games as a Tool for the Moral Philosopher (Cambridge: Cambridge University Press, 1955) proposes an arbitration scheme awarding one individual more

because he has more power to inflict harm on the other. J.R. Lucas, "Moralists and Gamesmen," Philosophy, 34 (1959), 1-11 protests that fairness surely cannot allow that "relative advantage can be obtained not only by bettering one's position absolutely but equally by worsening one's opponents'." Similarly, John Rawls, A Theory of Justice, 134, urges his reader to "suppose that Matthew is a jazz enthusiast who plays the drums, and Luke a violinist who plays sonatas, in which case it will be fair on this analysis for Matthew to play whenever he likes, assuming as it is plausible to assume that he does not care whether Luke plays or not. Clearly something has gone wrong. What is lacking is a suitable definition of a status quo that is acceptable from a moral point of view." Rawls, of course, has his own distinctive ideas about what constitutes an "acceptable" baseline. Sen, Collective Choice and Social Welfare, 118-23 makes a similar objection to the Nash solution, which resembles Braithwaite's in this respect.

10 In the act of requesting "your money or your life" the gunman has already moved away from the hypothetical baseline, and one would probably want to compensate the banker for the resulting duress and mental anguish that he suffers.

11 A similar standard of distributive justice is proposed in George C. Homans, Social Behavior: Its Elementary Forms (New York: Harcourt, Brace and World, 1961).

12 John Rawls, "Distributive Justice," Philosophy, Politics and Society, Third Series, ed. Peter Laslett and W.G. Runciman (Oxford: Blackwell, 1967), 58-82 at 63 argues that, under a system incorporating slavery, "the benefits and burdens of social cooperation are unjustly distributed even if everyone does gain in comparison with the state of nature. ..."

13 Pierre Joseph Proudhon, What is Property?

14 Incentives of the sort discussed in Sections 5-4 and 5-5 are sometimes thought to presuppose the institution of private property: an incentive effect can be created only by offering a person something he will enjoy, and enjoyment cannot be certain unless he is permitted to dispose of the good as he sees fit. (Even then enjoyment cannot be guaranteed, but that is another story.) However, this in no way entails private ownership of the means of production--it only involves offering some consumption extras. Thus, John Rawls, A Theory of Justice, 265-84 is right to argue that his scheme for offering incentives to well off men to improve the lot of the worst-off is compatible with a socialist economy.

15 C.D. Broad, "On the Function of False Hypotheses in Ethics," International Journal of Ethics, 26 (1916), 377-97 at 390. H.L.A. Hart, "Are There Any Natural Rights?" Philosophical Review, 64 (1955), 175-91 at 185. John Rawls, "Justice as Fairness," Philosophical Review, 64 (1958), 164-94 at 178;

Rawls, "Legal Obligation and the Duty of Fair Play," Law and Philosophy, ed. Sidney Hook (New York: New York University Press, 1967), 3-18 at 9; and Rawls, A Theory of Justice, 111-4, 342-50. Illustrative is Rawls' definition of the "principle of fair play": "Suppose there is a mutually beneficial and just scheme of social cooperation and the advantages that it yields can only be obtained if everyone, or nearly everyone, cooperates. Suppose further that cooperation requires a certain sacrifice from each person, or at least involves certain restriction of his liberty. Suppose finally that the benefits produced by cooperation are, up to a certain point, free: that is, the scheme of cooperation is unstable in the sense that if any one person knows that all (or nearly all) of the others will continue to do their part, he will still be able to share a gain from the scheme even if he does not do his part. Under these conditions a person who has accepted the benefits of the scheme is bound by a duty of fair play to do his part and not take advantage of the free benefit by not cooperating." ("Legal Obligation and the Duty of Fair Play," 9-10) David Lyons, Forms and Limits of Utilitarianism, (Oxford: Clarendon Press, 1965), 161-77. David A.J. Richards, A Theory of Reasons for Action (Oxford: Clarendon Press, 1971), 148-75. See also A.C. Ewing, "Suppose Everyone Acted Like Me," Philosophy, 28 (1953), 16-29 at 26; Charles Fried, "Moral Causation," Harvard Law Review, 77 (1964), 1258-70; Frank I. Michelman, "Property, Utility and Fairness: Comments on the Ethical Foundations of 'Just Compensation' Law," Harvard Law Review 80 (1967), 1165-1258; and L.W. Sumner, "Cooperation, Fairness and Utility," Journal of Value Inquiry, 5 (1971), 105-19. Mancur Olson, Jr. observes the improbability that Pareto-optimal policies will pass a referendum without a form of fairness he calls "fiscal equivalence," meaning that the area or group that benefits from the proposal be approximately the same as that which will pay the taxes necessary to implement it; see Olson, "The Principle of 'Fiscal Equivalence'," American Economic Review (Papers and Proceedings), 59 (1969), 479-87.

16 An example of an externality which exists by reason of inadequate legal machinery to bring the good within the workings of the market is air pollution. Polluters can freely foul the air because there are no "property rights" to clean air. Were there no property rights in land, eg., the same sort of overuse would result. The case of air pollution also suggests that even those externalities which exist due to the lack of legal machinery might not best be remedied by simple extensions of existing legal institutions; the proposal to give individuals a right to a clean environment is criticized on grounds of Fairness in Chapter 12.

17 Those who do not have to worry about such things (eg., the monopolist supplying necessities of life) do tend to set

artificially high prices, that is, to overvalue those things they offer as against those things they are to receive in exchange.

¹⁸ Knut Wicksell, "A New Principle of Just Taxation," Classics in the Theory of Public Finance, ed. Richard A. Musgrave and Alan T. Peacock (London: Macmillan, 1958), 72-118. James M. Buchanan and Gordon Tullock, The Calculus of Consent (Ann Arbor: University of Michigan Press, 1962).

¹⁹ Wicksell writes, "It is clear that justice in taxation tacitly presupposes justice in the existing distribution of property and income. If, however, this presupposition does not correspond to the facts, if there are within the existing property and income structure certain titles and privileges of doubtful legality or in open contradiction with modern concepts of law and equity, then society has both the right and the duty to revise the existing property structure. It would obviously be asking too much to expect such revision ever to be carried out if it were to be made dependent upon the agreement of the person primarily involved." (108-9) See R.G. Lipsey and R.K. Lancaster on "The General Theory of Second Best," Review of Economic Studies, 24 (1956), 11-33.

²⁰ See critiques of Buchanan and Tullock on this point by Brian Barry, Political Argument, 313-4 and A.K. Sen, Collective Choice and Social Welfare, 25. The example of the polluter is offered by Sen.

²¹ Both economists and sociologists have grasped this point. The Kaldor Compensation Principle has been modified by Harold Hotelling, "The General Welfare in Relation to Problems of Taxation and of Railway and Utility Rates," Econometrica, 6 (1938), 242-69, and John R. Hicks, "The Rehabilitation of Consumers' Surplus," Review of Economic Studies, 9 (1941), 108-16 to suggest that optimality is achieved if over several changes the winners could compensate losers. Peter Blau, Exchange and Power in Social Life (New York: Wiley, 1964) sees a similar series of exchanges underlying social organizations. Similarly, James Coleman, "Loss of Power," American Sociological Review, 38 (1973), 1-17 supposes that men sacrifice "power to use goods" for a voucher payable at some later date, i.e. "power to benefit."

Suppose two men are equally deserving of two things, one worth £1 and the other £1000. Flipping a fair coin to determine who gets each one does not ensure a fair distribution; ex hypothesi, the two men are equally deserving but at best the coin toss will give one £1000 and the other £1. This is why rewards in each instance must be either consistently small or consistently large. The requirement that large rewards be frequently distributed is based in repugnance for the prospect of a man with bad luck enduring a decade of abysmal poverty

before receiving his due. Hicks was careful to make this point in his modification of the Kaldor Compensation Principle.

²² A.C. Pigou, The Economics of Welfare, 4th edition (London: Macmillan, 1932), Part II, Chapter 9.

²³ R.H. Coase, "The Problem of Social Cost," Journal of Law and Economics, 3 (1960), 1-44.

²⁴ This is the argument of Mancur Olson, Assessing and Improving the "Quality of Life". See also Guido Calabresi, "The Decision for Accidents: An Approach to No Fault Allocation of Costs," Harvard Law Review, 78 (1965), 713-45 at 730: "The short of the matter is liability rules do affect the amount of money people make--in the short run; and in the long run people will enter those activities where they make more money." Subsequently, Calabresi, "Transaction Costs, Resource Allocation and Liability Rules," Journal of Law and Economics, 11 (1968), 67-73 has shifted his attack to the unrealism of assuming zero transaction costs and has admitted that "the same type of transactions which cured the short run misallocation would also occur to cure the long run ones," that is, "those who lose from this 'misallocation' would have every reason to bribe" producers to correct the misallocation (pp.67-8). This is not quite correct, however, since imposition of the liability rule makes it more expensive to bribe producers than it formerly was to purchase the same quanta of goods from them.

²⁵ Similar arguments are implicit in Francis Y. Edgworth, "The Pure Theory of Taxation," Papers Relating to Political Economy (London: Macmillan, 1925), Volume II, 100-16 at 102-3: "each party may reflect that, in the long run of various cases, the maximum sum-total utility corresponds to the maximum individual utility. He cannot expect in the long run to obtain the larger share of the total welfare. But of all principles of distribution which would afford him now a greater, now a smaller proportion of the sum-total utility obtainable on each occasion, the principle that the collective utility should be on each occasion a maximum is most likely to afford the greatest utility in the long run to him individually." John R. Hicks, "The Rehabilitation of Consumers' Surplus," Review of Economic Studies, 8 (1941), 108-116 at 11 is more explicit: "If the economic activities of a community were organized on the principle of making no alterations in the organization of production which were not improvements in this sense [i.e., satisfying the Kaldor-Hicks-Scitovsky Compensation Test], and making all alternations which were improvements that it could possibly find, then, although we could not say that all the inhabitants of that community would be necessarily

better off than they would have been if the community had been organized on some different principle, nevertheless there would be a strong probability that almost all of them would be better off after the lapse of a sufficient time."

26 This argument is developed on the implicit assumption of risk neutrality by John C. Harsanyi, "Cardinal Utility in Welfare Economics and in the Theory of Risk-taking," Journal of Political Economy, 61 (1953), 434-5 and Buchanan and Tullock, The Calculus of Consent, 78-9. In both cases the conclusion is that the Rational Man would opt for rules maximizing average utility, but this is the same as maximizing sum-total utility where population is held constant. John Rawls; A Theory of Justice, develops the argument with regard to extremely risk-averse choosers.

27 It is sometimes argued that a severely progressive income tax will have similar effects because, by depriving the rich of wealth which they presently (probably unfairly) enjoy, they will have less incentives to produce. This is a necessary truth only insofar as the redistribution worked in this way bears no relation to the productivity of the recipients. A.C. Pigou, The Economics of Welfare, 4th edition (London: Macmillan, 1932), Part IV, Chapter X argues that a transference from the rich to the poor will augment the national dividend so long as the transferences "differentiate against idleness and thriftlessness."

Again, it is argued with reference to piece work rates that paying a man half as much will make him work twice as hard so as to earn the same wage packet. This is true only if there is something special about his earnings level, eg., that it is a subsistence wage. Otherwise this is likely to be false. When his pay rate is halved, the opportunity costs of, eg., leisure are also halved; and under ordinary circumstances a man will partake of more of a good at a lower price.

28 This argument turns on two assumptions of empirical fact: (1) that increasing incentives up to the "fair share" induces increasing productivity and (2) that increasing incentives beyond that point induces little increased productivity. If an incentive to man A in excess of his fair share increases A's productivity more than the corresponding loss to another man B decreases B's, then A would rationally desire an unfair share: it promises him a larger fraction of a larger total.

These assumptions seem to be broadly true for individuals acting in isolation--a man will produce as much good as he can if but only if he enjoys the full fruits of his own labor. The difficulty of disentangling the contributions of various men in joint enterprises makes it difficult to reflect upon

the truth of these assumptions in such contexts. There the controlling factor in spurring productivity is likely to be the individual's subjective estimation of the fairness of the distribution, this estimation being largely determined by the attitudes of his reference group.

APPENDIX TO CHAPTER 5:
LEGAL REFLECTIONS OF THE FAIRNESS PRINCIPLE

The balance of Part III argues that the concept of Fairness can explain the norms of political morality as they are revealed by linguistic analysis. The proof of the proposition lies in the resemblance between the requirements of those principles and the implications of the Fairness Principle. Equally impressive is the extent to which legal norms also embody requirements of Fairness. This appendix argues in summary fashion that the basic principles of the civil and criminal law are largely reflections of Fairness. Primary reference is to English law, but occasional comparisons to U.S. law are made.

5A-1: Civil Law

The Fairness Principle is an attempt to ensure that each man prospers according to his own works. Starting from the hypothetical baseline in which no one's activities affect anyone else, it requires compensation for movements away from that baseline. For the purposes of tracing reflections of the Fairness Principle in the civil law, it is helpful to consider separately two classes of applications: (1) cases in which one man's actions impose losses on another, and (2) cases in which one man's behavior causes another to gain. In the first class, fair dealings require the first man compensate the second for his losses. This

parallels requirements of the laws of torts and damages and the rules surrounding the exercise of the eminent domain power. In the second of cases, Fairness requires the beneficiary repay his benefactor, and this is ensured by the law of restitution and certain provisions in the law of contract.

The core of one entire body of law, torts, is a direct reflection of the Fairness Principle. "The law of torts is concerned with those situations where the conduct of one party causes or threatens harm to the interests of other parties," writes Street. An "interest" is defined as "a claim or want or desire of a human being or group of human beings which [they] seek to satisfy" Included among interests protected by the law of torts are personal and proprietary interests, reputation, interests in economic relations and family relations, etc. The purpose of the law of torts is to prevent one man infringing the interests of another or, failing that, to adjust losses resulting from such infringements. "This adjustment is made by providing compensation for the harm suffered by those whose interests have been invaded owing to the conduct of others." For example, the law prescribes certain standards of carefulness for individuals engaging in dangerous activities. A man whose failure to conform to those standards causes another harm has committed the tort of negligence, and the injured may recover his losses from him accordingly. The basic notion of the law of torts, then, directly parallels

that of the Fairness Principle.¹

In addition, many of the particulars of the law of torts resemble the implications of Fairness. Especially relevant are defenses to intentional torts. One of these is consent--"one who has freely assented to conduct by another cannot sue that other for damages resulting from that conduct" For this reason, a boxer cannot sue his opponent for damage done him by fair hits in the course of the boxing match. Fairness, too, is likely to make consent a defense because it considers a man the best judge of his own interests; he would not have consented to an act which on balance would do him more harm than good. (This is subject to comments made with regard to the Fairness of paternalism in Section 8-2) A wide range of defenses in the law of torts are fair because they aim to preserve or restore the hypothetical baseline situation when uncompensated movements away from it are threatened or have actually occurred. Included among these defenses are self defense (one may use "reasonable force" in defending his person and property), recaption of chattels ("it is a defense to trespass that reasonable force was being used to retake chattels which were being wrongfully withheld from the defendant") and abatement of nuisance ("it is a defense to trespass to land that the act was done to end a nuisance to the defendant for which the plaintiff was responsible").²

The law of torts enables determination of whether and by

whom a wrong has been committed. It is supplemented by the law of damages, which is aimed at calculating the amount of defendant's liability. "The object of an award of damages is to give the plaintiff compensation for the damage, loss or injury he has suffered. Damages are the pecuniary compensation, obtainable by success in an action, for a wrong which is either a tort or a breach of contract, the compensation being in the form of a lump sum which is awarded unconditionally and is expressed in English currency." The law of damages reflects the Fairness Principle in its form-- it offers compensation to the injured and this payment is in repayment for past wrongs and not conditional on any future actions. More significantly, it mirrors the Fairness Principle in its test of the adequacy of compensation. The appropriate measure of damages is "that sum of money which will put the party who has been injured, or who has suffered, in the same position as he would have been if he had not sustained the wrong for which he is now getting his compensation or reparation." The requirements of the law of damages are identical to those of the Fairness Principle on this point.³

The same rules of the law of damages apply to another type of case in which fair compensation is due for injuries done, breach of contract. Reflections of the Fairness Principle in the rules governing the making of contracts are discussed below, but there are also reflections of Fairness in the rules governing the breaking of contracts. A man who

breaks a contract must make a payment to the other party to the contract in an amount which will leave him as well off as he would have been had the contractual obligations been performed.

The sovereign power of eminent domain allows confiscation of personal property for public uses. An entrenched rule in English law (and a provision in the U.S. Constitution) requires that in exercising this power the sovereign must compensate the owner for the loss of his property. Compensation would also be required by the Fairness Principle on two grounds: the public benefitting from the confiscated property must repay their benefactor, the former owner; and the former owner deserves compensation for the loss he suffers as a result of the seizure. Fairness specifies the amount of compensation due him as that which would make him as well off as before the confiscation. This is reflected in legal provisions attempting to prevent the owner from exploiting his strategic position and demanding excessive compensation.⁴

A second aspect of the Fairness Principle concerns benefits. If an individual does something to benefit another, then the beneficiary must fairly repay his benefactor. This half of the Fairness Principle seems less firmly entrenched in the law, but traces of it certainly can be found in the laws of restitution and contract.

The law of restitution (or unjust enrichment) is a

modern consolidation of several ancient legal principles. The pioneer in this project was the American Law Institute, which published the Restatement of the Law of Restitution in 1937, and consolidation of the English law of unjust enrichment is only just beginning. The basic principle of restitution might be summarized in this way:

There are many circumstances in which a defendant may find himself in possession of a benefit which, in justice, he should restore to the plaintiff. Obvious examples are where the plaintiff has himself conferred the benefit on the defendant through mistake or compulsion. To allow the defendant to retain such a benefit would result in his being unjustly enriched at the plaintiff's expense, and this, subject to certain defined limits, the law will not allow. "Unjust enrichment" is, simply, the name which is commonly given to the principle of justice which the law recognizes and gives effect to in a wide variety of claims of this kind.⁵

A classic example of a case in restitution involves the delivery of merchandise to the wrong address. Major classifications of restitutionary claims are those in which the plaintiff himself conferred benefit on defendant (where plaintiff was mistaken, acted under compulsion, intervened as a matter of necessity, or conferred a benefit under an ineffective transaction) and those in which defendant acquired benefit through his own wrongful act.⁶ The law of restitution is rather a direct reflection of the Fairness Principle. Fairness dictates that a beneficiary must compensate his benefactor; the law of restitution requires him to return the goods unless he has done something to benefit his benefactor in order to deserve them.

A second legal principle reflecting the benefit side of Fairness is a provision in the law of simple contract. Essentially, a contract is a promise, with the man making the promise (the promisor) agreeing to do something that the man to whom the promise is made (the promisee) desires. Thus, a promisee always gains from a contract. The law guarantees that the promisor also gain from the contract in requiring that contracts not under seal must involve consideration if they are to be legally binding. "A valuable consideration in the sense of the law may consist either in some right, interest, profit or benefit accruing to the one party [the promisor], or some forbearance, detriment, loss or responsibility given, suffered or undertaken by the other [the promisee]."⁷ At the very least, consideration must involve something to the detriment of the promisee, but it must also be something that benefits the promisor. This requirement goes some way towards achieving Fairness in requiring that the beneficiary (the promisee) do at least something to repay his benefactor (the promisor). The Fairness Principle goes further in specifying the amount that the beneficiary must repay, but the law of contract stops short of that. It does so for a reason that is itself an element in the Fairness Principle. The principle that "the Chancery mends no man's bargains" is a direct reflection of the Fairness Principle's dictum that each man is the best judge of his own interests.⁸

5A-2: Criminal Law

The Fairness Principle has impressive power to explain basic principles of civil law. Fairness is also among several equally plausible interpretations of the criminal law. In light of the success of the Fairness Principle in explaining principles of civil law, interpreting the criminal law as a reflection of Fairness becomes especially attractive.⁹

At the outset, it is important to note the differences between the aims of the civil and criminal law. In the course of many criminal offenses someone is injured in some way. Fairness dictates ~~that~~ such individuals deserve compensation, and civil law usually affords them remedies. To be sure, the system is not perfect. Not all types of damages resulting from criminal offenses are recoverable by a civil action, and few criminals are in the financial position to compensate adequately their victims. To remedy these shortcomings, Britain established in 1964 a Criminal Injuries Compensation Board from which anyone injured in a crime of violence can collect compensation. Similar programs operate in New Zealand and six states in the U.S.¹⁰

Unlike civil law, criminal laws are not primarily aimed at compensating victims. Rather, a criminal offender "becomes liable to punishment by the state, not for the purpose of affording compensation or restitution to anyone who may have been injured, but as a penalty for the offense and in order to

deter the commission of similar offenses and in some cases, for the reform of the offender."¹¹

The criminal law is only a partial reflection of the Fairness Principle. Its prohibitions attempt to prevent anyone from ever doing certain things which would harm others, thereby protecting certain hypothetical baseline situations. The criminal law does not, however, allow for movements from the hypothetical baseline, even with compensation payments, as does the Fairness Principle. This might still be interpreted as a reflection of Fairness, however. Fairness would, in effect, prohibit any and all movements from certain baselines if it were impossible that adequate compensation could ever be made for such movements.¹² It does seem unlikely that a criminal offender could ever adequately compensate all those who suffer from his transgression, either because his victims are numerous (especially if insecurity and diminishing peace of mind count as losses) or else because his victims are few but suffer greatly (from loss of life or severe disability).

The criminal law might be interpreted as a reflection of the Fairness Principle, then, if it prohibits acts which will certainly or potentially cause great harm to others. The major classes of criminal offense certainly do fit this description. Offenses against the person (homicide, assault, sexual crimes), offenses against property (theft, obtaining by deception, blackmail, forgery, criminal damage to property),

and offenses against the state (treason, offenses against public peace and the public order) all would cause grave injury to other individuals. Even infringement of requirements without moral overtones--driving on the correct side of the road, carrying a light on your bicycle-- would put public health and safety in rather serious jeopardy.

The famous category of "victimless crimes" might seem to be exceptions to this generalization. Even if they are, they are few in comparison to the multitude of offenses involving serious injury to others and hence they are hardly significant exceptions. It is unnecessary, however, to regard them as exceptions at all. Even "victimless crimes" might be considered legislative attempts to prevent one man's actions from causing another harm. In the end, the arguments of proponents of bans on obscenity and homosexuality amount to a plea for the protection of their interests; they are shocked simply to know that such things go on, albeit behind their backs, and they appeal for legislation to protect them from this kind of harm. More significant is the further argument that individuals who engage in practices prohibited by "victimless" prohibitions of the criminal law are likely to do something actually hurtful to others. A man carrying a loaded pistol in the city is not harming anyone else until he actually fires it, but the criminal law prohibiting him from carrying it is clearly aimed at preventing the harm he is likely to do with the firearm. Similarly, laws against

homosexuality are thought to protect children from the advances of perverts, and laws against pornography and obscenity are thought to prevent a mentally disturbed reader from acting out scenes from such books or films on women walking down the street.

Any discussion of the aim of the criminal law must necessarily deal with the familiar controversy over the general aim of punishment. The Fairness Principle clearly requires that the law should be aimed at deterring criminals or, failing that, rehabilitating them or, failing that, keeping them out of society. It can also justify crude forms of retribution. Fairness requires that victims of crime be compensated for their losses, and some arguments for retribution point to the pleasure that victims enjoy when transgressors are punished.¹³

5A-3: International Law

The Fairness Principle is a code for the guidance of individuals, whereas the law of nations is to guide states. Fairness can sensibly be applied to nation-states only insofar as they are personified. Viewed this way, the sentiment underlying the law of nations--that states ought respect each other's sovereign prerogatives--does seem similar to the Fairness Principle's attempt to preserve the hypothetical baseline in which no one's actions affect anyone else. The Fairness Principle will permit movements from

this baseline, provided all those affected gain. Domestic laws of contracts and the international law of treaties both embody this principle. The Fairness Principle will permit individuals to attempt to reverse uncompensated movements away from the hypothetical baseline situation. Similarly, international law permits one nation to use force against another only when the other has already violated that principle of non-interference (by invading, harming its citizens or seizing their property without payment, etc.).¹⁴

Much of international law concerns standards for the protection of aliens and their property from damage either by the state or individuals within the state. Such rules amount to a requirement that host countries treat aliens fairly. The state must provide a system of law and administrative facilities capable of preventing others' activities from damaging the alien or his property or, failing that, redressing the damage. If a state lacks such a system or fails to take adequate precautionary measures for the protection of aliens and their property, it becomes implicated in the injury done them.¹⁵

Positive requirements of international law contain fewer reflections of Fairness than do international judicial rules for redressing breaches of them. When one man's actions cause another harm, Fairness requires the former to compensate the latter in an amount which would leave him as well off as before the action damaging him. Insofar as is possible, orders for reparation for international wrongs direct

restitutio in integrum (restitution in kind). Only where it is impossible to restore the status quo ante are damages awarded in lieu. Restoring the status quo ante is, of course, the most direct way of implementing the Fairness Principle's requirement that the damaged party be made as well off as before. When award of damages is in order, it is in an amount that would "put the claimant in an identical financial position" to that he would enjoy were the wrong not done. The rule of the International Court is that "reparation must, as far as possible, wipe out all the consequences of the illegal act and re-establish the situation which would in all probability have existed if that act had not been committed."¹⁶ The amount of damages awarded in international legal cases, then, is precisely that dictated by considerations of Fairness.

NOTES

¹ Harry Street, The Law of Torts, 5th edition (London: Butterworths, 1972), at 3, 5ff., 101. See also George P. Fletcher, "Fairness and Utility in Tort Theory," Harvard Law Review, 85 (1972), 537-73.

² Street, 74 ff. It must be noted that the law makes no explicit reference to the hypothetical baseline discussed here although some such notion seems implicit in these defenses.

³ Harvey McGregor, McGregor on Damages, 13th edition (London: Sweet and Maxwell, 1972), at 6, 3, 7. The definition of the measure of damages is quoted from the speech of Lord Blackburn in Livingston v. Rawyards Coal Co. (1880) 5 App. Cas. 25, 39.

⁴ Keith Davis, Law of Compulsory Purchase and Compensation (London: Butterworths, 1972). See also Frank I. Michelman, "Property, Utility and Fairness: Comments on the Ethical Foundations of Just Compensation Law," Harvard Law Review, 80 (1967), 1165-1258, although Michelman works with a distinctly Rawlsian notion of fairness.

Like eminent domain, the police power often involves taking things away from individuals for the benefit of the public at large. The government need not compensate owners of property confiscated pursuant to the police power, whereas it must compensate victims of eminent domain. The distinction between the police power and eminent domain might be drawn with the help of the Fairness Principle. The police power is involved in reversing uncompensated movements from the hypothetical baseline, and eminent domain consists in making movements from the hypothetical baseline. A similar distinction is drawn by Joseph L. Sax, "Takings and the Police Power," Yale Law Journal, 74 (1964), 36-76.

⁵ Robert Goff and Gareth Jones, The Law of Restitution (London: Sweet and Maxwell, 1966), 11. See also American Law Institute, Restatement of the Law of Restitution (St. Paul: ALI Publishers, 1937); and George E. Palmer, Mistake and Unjust Enrichment (Columbus: Ohio State University Press, 1962).

⁶ Goff and Jones, 27.

⁷ J. Lush, Currie v. Misa (1875), L.R.10 ex. 153, at p.162. See A.G. Guest, Anson's Law of Contract, 23rd edition (Oxford: Clarendon Press, 1969), Chapter III; James Wicks, Consideration in the Law of Simple Contract (London: Stevens and Sons, 1939); and W.S. Holdsworth, "The Modern History of the Doctrine of Consideration," Boston University Law Review, 2 (1922), 87-97.

⁸ Lord Nottingham, 3 Swanst. 651,655 (1676). "The adequacy of the consideration is for the parties to consider at the time of making the agreement, not for the Court when it is ought to be enforced," writes J. Blackburn, Bolton v. Madden. See also Guest, 91 ff.

⁹ The only previous attempt to offer a Rational Man analysis of legal systems, Gordon Tullock, The Logic of Law (New York: Basic Books, 1971), considers only the criminal law. As a result the analysis is less persuasive that it might be.

¹⁰ Leroy L. Lamborn, "Toward a Victim Orientation in Criminal Theory," Rutgers Law Review, 22 (1968), 733-68. See Donald B. Williams, Criminal Injuries Compensation (London: Oyez Publications, 1972) on the British experience and, on the American experience, Gilbert Geis, "State Compensation to Victims of Violent Crime," Appendix B to the report of the Task Force on Assessment, President's Commission on Law Enforcement and the Administration of Justice, Crime and Its Impact: An Assessment (Washington, D.C.: Government Printing Office, 1967).

¹¹ Ian McLean and Peter Morrish, Harris's Criminal Law, 22nd edition (London: Sweet and Maxwell, 1973), 4.

¹² See Section 8-4 for a similar analysis of human rights.

¹³ H.L.A. Hart, Punishment and Responsibility (Oxford: Clarendon Press, 1968); and H.B. Acton (ed.), Philosophy of Punishment (London: Macmillan, 1969).

¹⁴ Henry Sidgwick, The Elements of Politics, 2nd edition (London: Macmillan, 1897), Chapter XV argues that the principle of non-interference is the main basis of international duty. See also I.M.D. Brownlie, International Law and the Use of Force by States (Oxford: Clarendon Press, 1963).

¹⁵ D.P. O'Connell, International Law (London: Stevens and Sons, 1965), Chapter 28.

¹⁶ Permanent Court of International Justice, Chorzow Factory Case P.C.I.J., Ser. A., No. 17 (1928) at p. 47. See also O'Connell, Chapter 36.

CHAPTER 6: POLITICAL OBLIGATION

This chapter contends that the Fairness Principle can explain the nature and extent of a man's obligation to obey the laws of his State. The first section is an exercise in conceptual analysis aiming to discover the details of moral norms travelling under the names "political obligation" and "civil disobedience." Section 6-2 explores the implications of the Fairness Principle for such situations, and it concludes that Fairness can adequately explain these norms. The third section attempts to explain the peculiar strength of a citizen's obligation to obey democratically-enacted laws from within the Fairness Principle.

6-1: Political Obligation

Both words of the phrase "political obligation" are potentially troublesome.¹ First, the allusion to things "political" must be clarified. In talking of more ordinary sorts of obligations (such as promissory obligations or legal obligations) the adjectival modifier refers exclusively to the way in which the obligation is incurred (by promising or through a legal enactment). Perhaps "political" is likewise a reference to the political system as the source of the obligation--surely there could be no such obligation without a political system. But the word "political" also connects with "obligation" in ways very different from other adjectives like "promissory." "Political" refers not only to

how the obligation came into being but also to the content of the obligation. Promissory and legal obligations are open-ended as regards their content; they can require virtually any performance. "Political obligation" is a very specific reference to a single obligatory performance, obedience to the laws of the state.

Such an analysis closely connects political and legal obligation, but the two are not identical. Sharpening the distinction between them sheds more light on the nature of political obligation. The notion of legal obligation is relatively straightforward. A man's legal obligation in any particular situation is a simple matter of what the law requires of such persons in such situations; if the law commands him to do something, that is his legal obligation. Lord Rothschild is, presumably, a member of the class of citizens to which tax laws apply, so he is under a legal obligation to pay his taxes. But the question, "Why should I obey the law?" has no answer internal to the law itself. As Wittgenstein suggests, "Justification consists in appealing to something independent."² Political obligation, the obligation to obey the law, must necessarily be an extra-legal obligation. It stands above the law and imposes a moral obligation to discharge one's legal obligations. The relation of political to legal obligation might best be put as a point in logic: political obligation provides the major premises of the syllogism of which legal obligation is the consequent. Schematically,

X is obligated to do what the law requires.	(Political obligation)
<u>The law requires X to do A.</u>	(Legal fact)
∴ X is obligated to do A.	(Legal obligation)

Thus, while political and legal obligation are far from the same thing they are very closely connected.

Something more must be said of the scope of political obligation. "Political obligation" refers to the obligation to obey all the laws of the state. The obligation is far more than a requirement of general obedience to most of the laws most of the time. Rather, political obligation is the obligation to obey the state's law qua law, and therefore it extends to all the legally valid enactments of a Government.³

The second troublesome concept in "political obligation" is that of "obligation." Whatever adjectives are attached, "obligation" is basically a deontological notion. An unavoidable implication of the existence of an obligation is that, other things being equal, the obligatory actions ought be performed. The principle that one ought discharge his obligations is a moral principle and the "ought" resulting from such a principle is, therefore, dubbed a "moral ought."

An obligation is a very special way of imposing a moral ought. Unlike more typical bases for assigning moral oughts, obligations are created ("assumed" or "incurred") and terminated ("discharged" or "dissolved"). Ordinarily societal

rules or conventions ascribe an obligation to a particular agent by reason of his special personal characteristics, usually something he did or something he is. "Obligation" is an inter-personal notion, involving both the person who is obligated and the person or persons to whom he is obligated. Unlike other moral oughts, performance of which is typically "owed" the community at large, the binding force of an obligation seems limited to demands of specific "claimants." If no moral considerations other than the obligation are involved, the obligation ought be discharged only because of the "legitimate expectations" it arouses in those to whom the performance is due. The actions occasioning the obligation, in turn, give rise to legitimate expectations because of the societal rules or conventions which ascribe such a meaning to such actions. The only reason one expects others to keep their promises, for instance, is that societal conventions assign this meaning to the act of promising.⁴

The principle that one ought discharge his obligations has been described as a moral principle. Significantly it is only one among many such principles, and their requirements can and frequently do come into conflict with one another. Where the directives of two moral principles are contradictory, a higher-order moral rule must be invoked to determine which one "overrides" the other. Most moral codes would hold that one ought both save drowning children and keep promises; and most have a rule that when one cannot do

both (eg., saving the child would make him late for a promised meeting) the first ought overrides the second, so the savior is morally blameless for missing his appointment. Such moral conflicts are as common as they are vexatious for men seeking practical moral guidance.

The moral ought attaching to an obligation is not immune to being overridden by other moral oughts. What one is obligated to do is certainly not necessarily what, on balance, he ought to do. The ought attaching to one obligation might be overridden by an ought arising from another obligation--Michael Walzer counters political obligation with "the obligation to disobey"--or by an ought arising from a moral principle having nothing to do with obligations. Considerations of human decency would surely override any obligations to obey the Nazi laws pertaining to Jews. The moral ought attaching to obligations, like any other moral ought, is capable of being overridden.⁵

As examples in the preceding paragraph suggest, political obligation is susceptible to being overridden just as any other obligation. In the most limited case, another moral ought might supersede the obligation to obey this particular law on this particular occasion. (One might have to jaywalk to rescue a drowning child.) In the same way other moral oughts might override the obligation ever to obey this law, this class of laws, or even all the laws of this Government. Political obligation is a factor to be weighed into moral

calculations, and the fact of a man's obligation constitutes a prima facie reason for behaving as obligated. But, morally speaking, political obligation is not so central a consideration as to ride roughshod over any and all other moral considerations.

Depending on the extent to which political obligation is overridden, civil disobedience, resistance or revolution might be morally justifiable. Most would agree that, in principle, political obligation could be overridden to such an extent, but, of course, there is much disagreement over the details of where to draw the lines. There is little agreement on what sort of countervailing moral considerations to require to justify each sort of activity. Linguistic analysis seems futile here precisely because there is no settled moral convention on the point. More important, though, is the impressive agreement on the conclusion that political obligation is not absolute, that it can in some circumstances be overridden.

Ordinary language analysis betrays a preference within the Anglo-American moral community for some methods of breaking the law over others. The favorite is civil disobedience. "Civil disobedience" essentially refers to a way of breaking the law, not to reasons for breaking it.⁶ Civil disobedience is designed to be the "nicest" possible way to break a law. It stands at the border between political obedience and disobedience--a civil disobedient breaks a

law in such a way that signals his allegiance to the legal system in which that law is set.

It is important to discover what characteristics of civil disobedience make it an approved way of breaking the law. One reason, surely, is that an act of civil disobedience infringes a narrow range of legal obligations. Starting from a prima facie obligation to obey the law, it obviously takes less to justify an isolated infraction (such as civil disobedience) than thoroughgoing disobedience (resistance or revolution). Thus, the favoritism shown towards civil disobedience might amount to nothing more than a simple logical consequence of the prima facie obligation to obey the law, in which case the concept would hold no independent fascination. In order to test the conjecture that this is all that civil disobedience has in its favor, let us engage in a mental exercise: hold constant the extent of the illegality and vary only the method. Perhaps an example drawn from the real world would contrast Gandhi's revolution with Castro's. It seems that where the same laws are infringed to the same extent, it is still better (from the moral point of view) to infringe them as a civil disobedient than as a revolutionary. Apparently, then, civil disobedience has something more in its favor than the simple fact that it is ordinarily the most limited form of disobedience. Therefore, it is important to inquire further into its special characteristics.

By definition, civil disobedience involves an illegal act. The disobedience is a protest aimed at changing a specifiable governmental policy. While the disobedience is a protest against some policy, the form of the protest implies some measure of acquiescence to the legal system in which the offensive law is embedded. This is a consequence of the definitional requirement that a civil disobedient must be willing to accept the legal consequences of his illegality. Since civil disobedience is a form of political protest, it must become public at some point, although not necessarily at the moment it is committed. Justifiable civil disobedience occurs only when the agent has reasonable grounds for believing that legally-permissible appeals would be futile, although that does not mean he need actually have tried and failed before concluding legal mechanisms would be to no avail. Civil disobedience must also be minimally violent ("civil" in the sense of "civility") but the boundary between nonviolence and violence is obviously fuzzy.⁷

Linguistic analysis yields much information about the moral community's norms surrounding political obligation. To explain these norms, a theory must explain several things: the prima facie obligation to obey all the laws of the state, the possibility of that obligation being overridden in special circumstances, and the preferability of some techniques of breaking the law (such as civil disobedience) over others.

6-2: The Fairness of Political Obligation

Fairness explains political obligation in terms of sacrifices and benefits. The Fairness Principle starts from the hypothetical baseline in which no one's actions affect anyone else's welfare and allows only fair movements from that baseline. That requires beneficiaries to repay their benefactors and those causing others to lose to compensate their victims.

Political obligation arises only in connection with governments, and the function of government (as analyzed in Part II) is to facilitate coordination of the behavior of individuals who often have mixed motives. Law serves as an instrument of coordination by specifying one particular outcome as the coordinated solution. Everyone will prefer this coordinated outcome to the probable results of independent decision-making; but for each individual the best possible outcome might well be for all others to adhere to the coordination scheme while he alone defects.

Such a situation involves considerations of Fairness in two ways. Each man who adheres to the coordination scheme produces benefits for everyone else; and to do so he sacrifices his own opportunity to profit by defecting. Consequently, Fairness requires that all those who gain from others submitting to the coordination scheme embodied in the law themselves make sacrifices benefiting their benefactors.⁸

The hard question is why such a beneficiary should repay his benefactors by obeying the law. Certainly that is one way of conferring benefits on them, but it is hardly the only way. What is more troubling, this method of repaying one's benefactors does not automatically guarantee the proper quantum of compensation. The sacrifices a man's benefactors made when they obeyed the law may exceed their gains from his obeying the law; or he may have gained substantially more from their adherence than he sacrifices when he obeys the law.

It does make sense for a man to repay others' sacrifices by reciprocating their obedience to the law, but it does only in light of the alternatives. The only alternative certain to result in more sufficient compensation to all parties involved is for a man to negotiate separate repayment agreements with each individual who obeyed the law to his advantage. The transaction costs of carrying on such negotiations in a group of any size are clearly prohibitive.

Under ideal circumstances in which the substantive requirements of the law are "fairly balanced," reciprocal obedience to law also can provide the correct quantum of compensation to all parties involved. A body of law might (at least in principle) be constructed in such a way that the sacrifices legally required of every given individual are just balanced by the benefits conferred on that individual by the legal system. Given such a system of laws, each man fairly compensates others for the sacrifices involved in

their adherence to law by reciprocating their obedience; and they fairly compensate him for his sacrifices by adhering to the laws. Such an ideal body of law will henceforth be called Fair Law.⁹

When actual law approximates Fair Law, the Fairness Principle requires each individual to adhere strictly to the letter of the law. Given a system of Fair Law, everyone must obey all the laws in order to behave fairly. The legal system must necessarily be very complex if it is to compensate adequately all those whom it requires to sacrifice for the benefit of others. An individual's disobedience of a single statute may result in the inadequate compensation of someone else for his obedience to the law. Analogously, for a man to discharge his contractual obligations he must abide by all the terms of the contract; neither law nor the Fairness Principle permits him to pick and choose which clauses he cares to obey. For the same reasons, a man must fairly obey all the statutes comprising the Fair Law.

At least with respect to Fair Law, the Fairness Principle generates "oughts" with characteristics generally associated with political obligation. Like those obligations, the oughts are incurred by particular men because of something they have done (benefited from others' adherence to legal norms); and they can be terminated or discharged (when he obeys the law and thereby sacrifices to their advantage). Like those obligations, the ought is an inter-

personal link connecting a man who is obligated and specifiable claimants (he who has benefited and those whose obedience benefited him). By virtue of societal rules and conventions (the Fairness Principle), legitimate expectations are aroused in those claimants that the man will perform certain precise actions (obey the law).¹⁰

All that has been said so far pertains narrowly to legal systems approximating Fair Law. Of course, few real legal systems realize that ideal, and to the extent of their shortcomings the Fairness Principle excuses some individuals from performing their legal obligations in some instances. But the Fairness Principle does provide men with a prima facie obligation to obey the state's laws. All it means to say there is a prima facie obligation is that

the fact that an action is an act of disobedience is something which always does count against the performance of the action. ... The fact that an action is illegal is a relevant consideration in every case and it is a consideration which must be outweighed by other considerations before the performance of an illegal action can be justified.¹¹

Looking at the situation from the point of view of Fairness, the one thing that can always be said against the Fairness of disobedience is that a man has benefited from others' obedience to the law. He is fairly obliged to repay them, and it is likely that one way of doing so is by behaving legally. Fairness may also provide him with all sorts of reasons to break the law, and on balance it might be more in

line with the Fairness Principle to disobey the law than to obey it. But at least a man always has this one reason for obeying the law, which is what it means to say he has a prima facie obligation to obey.

Surely the most interesting things about prima facie obligations is that they can be overridden. All the obligations imposed by the Fairness Principle, including political obligations, can be overridden. An absolute obligation for everyone to obey all laws all the time can only exist when the law is Fair Law. If real law departs only slightly from Fair Law then only minor acts of disobedience are justified to bring it into line with Fair Law. If the actual law is very different from Fair Law, it might be fair to engage in acts of resistance or even revolution in an attempt to change governments and thereby make the law more nearly Fair Law. How far up the ladder of disobedience-resistance-revolution one can fairly ascend depends on how far the actual law of a state departs from Fair Law.

Fairness also picks out civil disobedience as the favored way to break the law. Its first advantage is that it involves the least departure from the hypothetical baseline because it is essentially non-violent. Surely the source of our most serious doubts about the possibility of a fair revolution, for instance, stems from the violence done to the persons and interests of others; it seems doubt-

ful that all the losses resulting from a revolutionary's activities could ever be adequately compensated. Second, civil disobedience involves the signaling of a man's willingness to make sacrifices similar to those involved in fairly discharging his obligations to those whose obedience to law benefited him. To be a civil disobedient, a man must willingly submit to the legal sanctions attaching to his act of disobedience, which obviously involves a sacrifice on his part. The crucial difference between this sacrifice and that involved in his obeying the law is that, while he sacrifices (often as much and more than he would in obeying the law), those whom he is fairly obligated to benefit will gain little if anything from his sacrifice. Civil disobedience, then, is a way for men to demonstrate that their motives are as high-minded as they claim by dispelling suspicions that they are simply shirking from the sacrifices involved in obeying the law.¹³

6-3: Democracy and Disobedience

The strength of one's obligation to obey the laws is often perceived to be a function of the nature of the government promulgating them. A government's "nature" seems to be a composite of its constitutional form and the substance of its enactments. While diverse ideologies attempt to arrogate the term to themselves, most in the Anglo-American moral community agree that "democracy" is the best form of

government and that an individual's political obligation is strongest when his government is of this form. There seem to be few such hard and fast tests of the acceptability of a statute's substance, but most agree in principle that a government with a laudable constitutional structure might produce very disagreeable laws, in which case a citizen's political obligation is mitigated.

The neo-classical explanation of this is that political obligation is variable, and it is stronger when the government has a laudable nature. To say political obligation is "stronger," of course, is simply to suggest that it will take more or more compelling moral oughts to override it. Old-line contractualists argue that a citizen's political obligation is stronger in a democracy because he participates in the electoral processes. Such participation inevitably signals his acceptance of the democracy's decision-making procedures and, consequently, the laws that they produce. A variation on the contractualist position is suggested by Hanna Pitkin. For her, political obligation turns on hypothetical consent, that is, on whether rational men would have consented to such a form of government. This sort of analysis puts all the weight on the nature of the government: "If it is a good, just government doing what a government should, then you must obey it; if it is a tyrannical, unjust government trying to do what no government should, then you have no such obligation."¹⁴

It does seem less likely that a man's political obligation will be overridden by other moral considerations if his government is democratic. But attributing this fact exclusively to the stronger obligation to a democracy is a terribly incomplete explanation. By far more important is the infrequency with which a democratic decision procedure produces laws so morally onerous that disobedience is justifiable. No matter how strong or weak the obligation to obey the laws, it is a prima facie obligation, and it will be morally controlling unless some other moral considerations can be brought into play against it. Thus, whatever the strength of the obligation to obey, the results of a decision procedure will less often be overridden the less often they offend morality.

Fairness justifies disobedience of a law by reason of its substantive requirements. If the legal system taken as a whole bears little or no resemblance to Fair Law, then men have little or no reason in Fairness to abide by it. The form of government is relevant to questions of the justifiability of disobedience only insofar as some forms of government characteristically produce more nearly Fair Law. As James Mill argues in his Essay on Government, a democracy produces laws more sympathetic to the interests of more of its citizens more of the time than any other form of government, and Mill's expository argument has recently been bolstered by more elegant mathematical demonstrations and proofs.¹⁵ It is, therefore, more likely that a democracy's laws will

resemble Fair Law (i.e., each citizen's gains and losses will be balanced), and political obligation appears to be "stronger" in a democracy simply because it is less often overridden.

NOTES

¹ Excellent general analyses include Richard A. Wasserstrom, "The Obligation to Obey the Law," UCLA Law Review, 10 (1963), 780-807, and A.H. Campbell, Obligation and Obedience to Law (Oxford: Clarendon Press, 1965).

² This quotation is used to make the same point in H.B. Acton, "Political Justification," Contemporary British Philosophy, 3rd Series, ed. H.D. Lewis (London: Allen and Unwin, 1956), 21-44. See also Campbell and John Carnes, "Why Should I Obey the Law?" Ethics, 71 (1960), 14-26.

³ Wasserstrom makes this point forcefully.

⁴ This analysis of the special characteristics of obligations combines H.L.A. Hart, "Legal and Moral Obligation," Essays in Moral Philosophy, ed. A.I. Melden, (Seattle: University of Washington Press, 1958), 82-107, and John Ladd, "Legal and Moral Obligation," Nomos XII: Political and Legal Obligation, ed. J.R. Pennock and J.W. Chapman (New York: Atherton, 1970), 3-35. The synthesis resembles that of Richard E. Flathman, Political Obligation (New York: Atheneum, 1972). Reference here is to the strict usage of the term "obligation," although it is often used in less strict senses (as in, for example, "the obligation to tell the truth.")

The argument that "legitimate expectations" are the reason men ought discharge their obligations is attributable to J.F.C. van Loon, "Rules and Commands," Mind 67 (1958), 514-21; but it obviously presupposes an analysis of law as a system of rules similar to that of Hart, The Concept of Law, and perhaps "legitimate expectations" explain Hart's own observation that there is usually "serious social pressure" for obligations to be discharged (p.84).

⁵ Michael Walzer, "The Obligation to Disobey," Ethics, 77 (1967), 163-75 and Walzer, Obligations: Essays on Disobedience, War and Citizenship (Cambridge: Harvard University Press, 1970).

Alan Gewirth, "Obligations: Political, Legal, Moral," Nomos XII: Political and Legal Obligation, 55-88. A.M. Honoré, "Groups, Laws and Obedience," Oxford Essays in Jurisprudence, Second Series, ed. A.W.B. Simpson (Oxford: Clarendon Press, 1973), 1-21.

⁶ To be sure, civil disobedience has something to do with men's reasons for breaking the law. Robbing a bank for private gain can never count as civil disobedience. But the diversity of permissible motivations (political protest after all legal recourses are exhausted; refusal to obey a law offending one's conscience) suggests the form the behavior takes is more important than the motivations for it.

⁷ On the definition of "civil disobedience" see exploratory essays: Richard A. Wasserstrom, "Disobeying the Law," Journal of Philosophy, 58 (1961), 641-53 and the revised version, "The Obligation to Obey the Law," UCLA Law Review, 10 (1963), 780-807; Hugo A. Bedau, "On Civil Disobedience," Journal of Philosophy, 58 (1961), 653-65; Bedau (ed.), Civil Disobedience: Theory and Practice (New York: Pegasus, 1969); Christian Bay, "Civil Disobedience," International Encyclopedia of the Social Sciences, ed. David Sills (London: Collier-Macmillan, 1968), II, 473-87; Francis A. Allen, "Civil Disobedience and the Legal Order," University of Cincinnati Law Review, 36 (1967), 1-38 and 175-95; and Morris Keeton, "The Morality of Civil Disobedience," Texas Law Review, 43 (1965), 507-25. Excellent summaries include Paul F. Power, "Civil Disobedience in Recent American Thought," American Political Science Review, 64 (1970), 35-47, and Carl Cohen, Civil Disobedience (New York: Columbia University Press, 1971).

⁸ The benefit formulation of political obligation dates at least from Locke. It has recently reappeared in H.L.A. Hart, "Are There Any Natural Rights?" Philosophical Review, 64 (1955), 175-91 and Hart, "Legal and Moral Obligations," Essays in Moral Philosophy, ed. Melden, 82-107 at 105; John Rawls, "Civil Disobedience and the Duty of Fair Play," Law and Philosophy, ed. Sidney Hook (New York: New York University Press, 1967), 3-18 and developed more fully in Rawls, A Theory of Justice; David A.J. Richards, A Theory of Reasons for Action; Charles Fried, "Moral Causation," Harvard Law Review, 77 (1964), 1258-70; and Herbert Wechsler, "Toward Natural Principles of Constitutional Law," Harvard Law Review, 73 (1959), 1-35. For critiques of such views, see David Hume, "Of the Original Contract," Essays: Moral, Political and Literary on Locke; and Wasserstrom, "The Obligation to Obey the Law" on Wechsler.

Philosophers often fall prey to the mysterious allures of reciprocity and derive a man's duty to obey the law directly

from the fact that he has benefited from others having obeyed the law. Hart writes in "Are There Any Natural Rights?" that "I think political obligation is intelligible" only by reference to a special source of obligations, "mutuality of restrictions," which can be described as follows: "When a number of persons conduct any joint enterprise according to rules and thus restrict their liberty, those who have submitted to those restrictions when required have a right to a similar submission from those who have benefited by their submission" (page 185). Similarly, John Rawls argues that, presupposing a Just Constitution, "the obligation to obey the law ... is a case of the duty of fair play," which he defines by reference to a mutually beneficial scheme of social cooperation yielding certain public goods obtainable only if everyone or nearly everyone cooperates: "under these conditions a person who has accepted the benefits of the scheme is bound by a duty of fair play to do his part and not take advantage of the free benefit by not cooperating." ("Civil Disobedience and the Duty of Fair Play," page 9) Both Hart and Rawls hope that an individual will, by obeying the law, confer benefits on those whose adherence to law benefited him. Whether or not it does is clearly dependent upon the substantive content of the law. Kurt Baier, "Obligation: Political and Moral," Nomos XII: Political and Legal Obligation, 116-41 at 130 asks us to "suppose a given society has two classes benefiting very unequally. Then the ruling class is under an obligation to the ruled class to obey those discriminatory laws which will further exploit and suppress the ruled class. Those among the ruling class who find these laws unjust and work for their repeal or modification would be guilty of failure to discharge their obligations to the ruled class to obey the law. But what a strange way of discharging their obligation to them upholding the law would be!" Baier correctly rejects Hart's analysis on these grounds, but the Fairness Principle is immune to such criticisms. Fairness requires beneficiaries (in this case the ruling class) to repay their benefactors (the ruled) which means doing something that benefits them. In ordinary cases, everyone benefits from everyone else obeying the law, and on this basis the Fairness Principle imposes a prima facie obligation to obey. But Baier asks us to imagine a case in which obeying the law would not result in fair compensation to the beneficiaries' benefactors (the ruled), and in such a case the Fairness Principle joins Baier in requiring the rulers to support modifications of the law.

⁹ Notice that this is different from requiring that the law exact equal sacrifices and confer equal benefits on all citizens. That is not necessarily even a special case of Fair Law: perhaps everyone is being exploited.

At first glance, Fair Law might seem to have some very

disagreeable implications, eg. requiring that large taxpayers receive proportionately more benefits from the state. Careful examination, however, shows little new or offensive here. The traditional rationale for assigning a proportionately larger tax bill to a rich man is that money has decreasing marginal utility, so a rich man paying a larger percentage of his income in taxes makes approximately the same sacrifice as a poor man paying proportionately less. Besides, the wealthy receive more benefits from government-provided public goods which are notionally equally available to rich and poor; national defense does more for the rich man with much to protect than for the poor man with little to lose, and the rich benefit more from public buildings (airports, auditoriums) and services (universities, electric power) because they are in a better position to take advantage of them. The enactment of Fair Law certainly would not imply an increased service to the wealthy just because they are large taxpayers.

10 An incredible confusion is created if this is improperly phrased as a requirement to obey if one has voluntarily accepted benefits. Acceptance implies the possibility of doing otherwise, i.e. rejecting. In the modern world it is rarely possible to refuse state services; to anticipate Part IV, one cannot breathe without enjoying the state-assured cleanliness of the air. Admittedly, one accepts some state services he could have refused (sending one's children to public schools in the U.S., using the U.K. National Health Service, voting), but that only obligates one to obey the state qua School Board, National Health Service, and Election Commissioners. There just are not enough services one can refuse for the combination of these obligations ever to resemble an obligation to obey the state qua state.

If one somehow manages to derive an obligation to obey the state qua state from services a man voluntarily accepts, then the obligation is certain to be too strong to be political obligation in the familiar sense. It would be too hard (probably impossible) to override such an obligation, which makes it quite different from political obligation. A man who voluntarily enters into an agreement cannot subsequently charge that it was unfair--the obvious question is, "Why, then, did you agree in the first place?"

The requirement here is simply that a man has benefited, which makes it more a case of a "contract of adhesion" than an ordinary contract. The defining characteristic of such contracts of adhesion is that one party had no control over the terms of contract. The ordinary rule of the Law of Contract--that "Chancery mends no man's bargains," that if a man agreed he is bound--is modified here. Perhaps a man never saw the terms of the contract (as when one purchases a

bus ticket reading, "Issued subject to the Company regulations," the only copy of which is posted on the back of the Director's door); or perhaps both parties know the terms but one had no choice but to sign (eg., a pensioner signs an onerous lease because he cannot find any other accommodation within his budget). Contracts of adhesion are ordinarily considered binding but weak. Courts are less hesitant to overturn them than they are to nullify ordinary contracts. See Steven A. Arbitter, "The Form 50 Lease: Judicial Treatment of an Adhesion Contract," University of Pennsylvania Law Review, 111 (1963), 1197-1213; and Arthur Allen Leff, "Unconscionability and the Code--The Emperor's New Clause," University of Pennsylvania Law Review, 115 (1966), 485-559.

¹¹ Wasserstrom, "The Obligation to Obey the Law."

¹² Objecting to Hart's formulation, Baier, 130, writes "It is a corollary of this theory that since some people benefit more than others from the law-abidingness of other people, they have a stronger obligation to obey the law than those who benefit less" Again, Baier's criticism is valid for Hart's theory but inapplicable to the analysis of political obligation derived from the Fairness Principle. The amount of benefit is irrelevant in the latter analysis; all that matters is that benefits and sacrifices are balanced.

¹³ Milton R. Konvitz, "Civil Disobedience and the Duty of Fair Play," Law and Philosophy, ed. Sidney Hook, 19-28, makes a similar reply to Rawls' suggestion that a civil disobedient is a free rider who fails to discharge his "duty of fair play" (i.e., Fairness). Konvitz's reply, however, slides dangerously near the old argument, dating at least from Blackstone, that there is nothing wrong with disobeying law provided one pays the legal price attached to disobedience. This argument applies very well to some bodies of law, especially Contracts, because payment of the legal penalties will put everyone else in a position at least as good as that in which they would have been had the legally-required act been performed. But Contracts is a very special case and the balance of the law does not resemble it in this respect. In stark contrast to Contracts, the Criminal Law does not even guarantee compensation to victims of crimes. Since most acts of civil disobedience violate the Criminal Law, this is an especially damaging point against this analysis of civil disobedience. By paying the legal penalties for his disobedience, a civil disobedient signals his willingness to behave fairly; but that must not be misunderstood as a claim that he actually has behaved fairly. (See Alan Gewirth, "Obligation: Political, Legal, Moral," Nomos XII: Political and Legal Obligation, 55-88 at 85.)

14 For general discussion of these problems see Peter A. D. Singer, Democracy and Disobedience (Oxford: Clarendon Press, 1973). The explanation in terms of consent through voting is offered by Joseph Tussman, Obligation and the Body Politic (London: Oxford University Press, 1960); John P. Plamenatz, Man and Society (London: Longman, Green, 1963) I, 239-40; and Geoffrey Marshall, Constitutional Theory (Oxford: Clarendon Press, 1971), 211-7. On hypothetical consent, see Hanna Pitkin, "Obligation and Consent," American Political Science Review, 59 (1965), 990-9 and 60 (1966), 39-52. Her notion was obviously inspired by the work of John Rawls, and Rawls himself argues that political obligation only attaches to laws enacted under a Just (or nearly Just) Constitution. (See especially Rawls, "Legal Obligation and the Duty of Fair Play," Law and Philosophy, ed. Hook.) Richards, A Theory of Reasons for Action, 152-63 fits the Pitkin argument into an explicitly Rawlsian framework.

15 Douglas Rae, "Decision-rules and Individual Values in Constitutional Choice," American Political Science Review, 63 (1969), 40-56 demonstrates and Michael Taylor, "Proof of a Theorem on Majority Rule," Behavioral Science, 14 (1969), 228-31 proves that simple majority rule is the unique decision rule which minimizes the probability that a typical member will support a motion which the committee rejects or oppose a motion which is accepted, assuming that future preferences are unknown and that members vote for or against independently. In the empirical world, these two assumptions are rarely satisfied completely, and insofar as they are not a democracy might tend to be exploitative.

CHAPTER 7: JUSTICE, EQUITY AND EQUALITY

Taken together, justice, equity and equality constitute a cohesive set of evaluative principles. Perhaps the best evidence of the close interrelationships between these notions is that they are often called by each other's name. What philosophers following Aristotle call "justice" Barry and Lucas know as "equity" and Oppenheim and Wilson as "equality."¹ Fortunately, the discrepancies in labelling come to naught in the end--everyone finishes by joining the principles together into a nearly identical final package. The existence of such confusions, however, does encourage one to focus on the combination of these principles as the proper unit for analysis.

This set of principles functions at two levels. On the first, the principles are strictly formal rules prescribing only the form that other norms of political morality must take. On the second level, they have relatively precise substantive implications. This chapter is divided into two corresponding sections. The first analyzes these concepts in their roles as formal rules, and then it demonstrates that Rational Men would embrace such a set of principles in order to further the Aggregative Principle. Section 7-2 examines the several substantive implications of these principles. There it is argued that the practical implications of Fairness are similar to those of the familiar principles of political morality.

7-1: Formal Principles

In their formal role, justice, equity and equality are rules used to evaluate other social rules. This set of formal principles might also be used to criticize a variety of other things, such as a distribution of goods, behavior of an individual or of a state, etc., but the logic of these extensions is parasitic upon the critique of rules. A distribution of goods is just because it is the consequence of applying a just rule to the particular circumstances; a "just man" is one whose personal rules of conduct are just; a "just state" is one whose social and legal norms are just rules. Accordingly, the present discussion focuses on rules as the logical core of applications of the principles of justice, equity and equality.

Justice is achieved by a rule insofar as it treats like cases alike. Conversely, for a rule to achieve justice ("to be just" for short) it must treat differently those who are not alike.²

In a way, this formal requirement is an uninteresting restatement of what it is for cases to fall under a rule. A rule must first differentiate individuals A and B before it can direct different treatment be accorded them. A rule might make distinctions between individuals in an objectionable way (eg., by simply naming them) but it is logically impossible for a rule to direct that men be treated differently without first distinguishing between them in some way or another.

Thus, formal justice seems to be a useless test of rules because it is one they can never fail.³

This argument errs in focusing narrowly on one of the two ways a rule could be formally unjust. No rule can be unjust because it makes too few distinctions between individuals--this is logically impossible--but a rule might become unjust by making too many. In order to be just, a rule which distinguishes between individuals on several criteria must direct different treatment of each distinct class it picks out. It is logically possible (although certainly rare) for a rule to fail to do this, and such a failure would make the rule formally unjust.

Equity supplements and balances the operation of the rule of formal justice. Justice is a rule requiring other rules to treat like individuals alike and dissimilar persons differently. Equity is a rule dictating how differently they are to be treated. Given dissimilar individuals, equity directs that differences in treatment of them should be commensurate to the differences between their individual characteristics. The effect of the rule of equity is to preclude radically different treatment of persons who are only marginally dissimilar.

Alone the principles of equity and justice are obviously vacuous. Neither can go to work without some analysis of what makes people alike and what makes them different. That is to say, both principles presuppose some analysis of equality.

Were one unable to recognize like individuals (i.e., equals) when confronted with them, one could not make very effective use of the injunction to treat them alike.

Critiques of social rules often start by challenging the rule's analysis of equality, but an independent analysis of equality is not required to make sense of the rules of justice and equity. One can instead rely on the analysis of equality which is internal to the rules under examination. As already suggested, it is entirely possible for a rule to be formally unjust on its own criteria for differentiating between individuals; it might make distinctions which it subsequently fails to use. It is even easier for a rule to be inequitable on its own criteria; it might direct very different treatment for individuals who are on its own criteria quite similar. Although it is hardly persuasive to find that social rules are just and equitable from within their own analysis of the bases of equality, it would be especially damning to find them internally unjust or inequitable.

Examining a rule from within its own analysis of equality is the most rudimentary form of a critique. A more rigorous test calls into question the analysis of equality implicit in the rule. Surely most people object to South African law, for example, not because it is formally unjust or inequitable within its own criteria of equality but rather because it defines equality on the basis of race.

In its most general usage, the concept of "equality" suggests an identity. Two things (eg., balls) are equal with respect to some property (eg., radius) if they are identical with respect to that attribute (i.e., if their radii have the same length). Since no two distinct men are equal with respect to every attribute, the task of legislators is to decide which attributes to take into account in framing laws and how to weight the attributes.⁵

A formal test of "relevance" can be used to evaluate the bases upon which a rule distinguishes between individuals:

To say "x is relevant," when we are speaking about the treatment of persons, means "x is actually or potentially related in an instrumentally helpful or harmful way to the attainment of a given end and consequently ought to be taken into consideration in the decision to treat someone in a certain way."⁶

Personal characteristics are relevant only insofar as they are instrumental to the attainment of the goal of a rule, and a social rule may not properly direct differential treatment of individuals unless they are unequal in relevant respects. If, for example, the point of requiring a license to drive an automobile is to ensure safe driving, then relevant respects in which men might differ for the purpose of issuing a license include knowledge of traffic laws, ability to maneuver an automobile, susceptibility to seizures, visual acuity, etc., but exclude sex, education, hair color, etc.

Determinations of relevance depend crucially upon the

rule's goal, which may be ambiguous or objectionable or both. The goal of driver licensing laws is clearly to minimize the hazards to a large number of drivers simultaneously using public roads. But the goal of anti-pornography laws might be to prevent the perversion of children, to shield those whose sensitivities would be offended by such things or to prevent a deterioration of public morals in general. There is no way to determine which is the goal of this law. Jurists are fond of searching for legislative intent, but even this does not help in this case; no doubt each of these purposes of the law was on the mind of some legislators when they cast the crucial votes.⁷ Each different conception of the goal of the law implies a different set of relevant respects in which individuals might differ, so the ambiguity over a rule's goal leaves the "relevant respects" test helpless. In addition to the problem of ambiguity, this test also fails to provide grounds for appeals against many substantively onerous rules. The "relevant respects" standard allows one to correct men if they have chosen the wrong instruments to attain their goals, but it does not allow one to criticize what is usually more objectionable, their choice of goals. Apartheid laws have an unambiguous goal and the distinctions they make are clearly instrumental to the attainment of that goal. What is offensive there is the goal itself.⁸ This is not to deny that the relevant respects test can ever be useful, but it does presuppose a rule with a goal which is both unambiguous

and substantively unobjectionable.

Formal rules of justice and equity, when coupled with the relevant respects analysis of equality, simply direct that a society make and act upon rules distinguishing between individuals on bases instrumentally related to social goals. Formal justice requires that individuals who are alike on such criteria be treated similarly and that those who differ on such criteria be treated dissimilarly; and formal equity dictates that treatment differentials be commensurate to the differences between individuals on those criteria. Identical rules are implied by the Aggregative Principle discussed in Chapter 5. That Principle would require that social rules treat differently individuals with differing capacities for serving social ends if society is to take advantage of their fullest capacities, i.e., operate efficiently.

7-2: Substantive Principles

In addition to the formal implications already discussed, the concepts of justice and equality are also associated with certain substantive public policy recommendations. Although there is no obvious logical link between the formal concepts and the substantive recommendations traditionally associated with them, the same term is used in ordinary language to discuss both sets of implications nonetheless. Section 7-2 argues that the public policy implications of the Fairness Principle are substantially the same as the substantive implications of justice and equality.

7-2-a: Merit

It is often said to be a matter of justice that merit should serve as a basis for distinguishing between individuals. Although the Fairness Principle does not recognize merit per se as a reason for treating men differently, its practical implications are such that Fairness would direct differential treatment for individuals of differing merit. Before one can observe this convergence of the practical consequences of rewarding merit and observing the rule of Fairness, however, the concept of merit must itself be clarified.

"Merit" is best defined by Michael Young as "IQ plus effort."⁹ The concept is a composite of personal characteristics of two different kinds, one that the individual himself can do little to change (intelligence) and one that is very much within his control (effort). From the definition alone it is clear that meritorian arguments do not favor the rewarding of individuals for unactualized potential, for sheer IQ. Another important consideration is the individual's actions, the uses to which he puts his intelligence.

By definition the meritorious individual must have performed some action. Implicit in the way the concept of merit is used is a requirement that those actions have good effects. The definition itself does not entail this--effort might be no more than an indicator of industriousness, in which case actions of one sort are just as good as actions of any other. But imagine a thief who displays much ingenuity

in planning his crime and exerts much effort in its execution. Although his crime displays an abundance of IQ and effort, that would not make him meritorious on any standard analysis. The only apparent difference between the clever and hard-working thief and an equally intelligent and industrious chartered accountant is the end toward which he directs his efforts. Since the one is deemed meritorious and the other is not, it must be concluded that merit is a notion devised to reward individuals for their good works.¹⁰

The practical political uses of merit standards make it even more obvious that "merit" is ultimately a matter of the consequences of an individual's actions. The function of merit criteria in, for instance, the civil service is to justify paying individuals who perform certain services more than those who perform others. Rewarding the meritorious with higher pay obviously amounts to bribing (1) capable men to become trained to perform useful public services and (2) trained individuals to accept positions where they will be forced to use their talents in service to the community.¹¹

Like this substantive principle of justice, application of the Fairness Principle would result in the meritorious being rewarded. Conventionally, merit consists in the combination of intelligence and effort, but only insofar as they are directed toward good works. Given two men of equal intelligence, the one who exerts more effort toward such ends will produce more socially beneficial results. That is to

say, he will produce more good for more other men. Since the more meritorious of the two also produces the more good for others, the Fairness Principle requires others to offer the more meritorious man more in repayment of his benefactions. Given two men who exert equal efforts, the more intelligent man usually will in the long run produce better results. If both are working toward ends which are equally socially desirably, the more intelligent man will produce more benefits for other people. Again, in Fairness men must repay their greater benefactor more than they repay one who produced less benefits for them.

7-2-b: Needs

A second substantive standard of justice requires public policy be aimed at satisfying human needs. In political contexts, the concept of a need is usually used in relation to a specific individual and a specific goal. A definition of "need," then, amounts to an explication of the statement, "Individual I needs something S in order to do Y." It is true that I needs S to do Y if and only if (1) I does not presently have S under his control, and (2) controlling S is a necessary condition of doing Y. A statement of need is no more than a statement of the relationship between instruments available to an individual and a set of goals (perhaps but not necessarily his own). Obviously, an individual ought to be given what he needs to achieve goal Y only if he ought

achieve Y. While it is true that the homicidal maniac needs a weapon in order to achieve his murderous goal, it is not obviously true that he should be given what he needs. The desirability of realizing the goal for which something is needed, then, is what determines whether or not the need ought to be satisfied.

Needs might conveniently be classified according to the type of goal they serve.¹² "Biological needs" are prerequisites for human existence, including food, shelter, etc. "Basic needs" are prerequisites for a "decent life", a socially-defined construct which varies from society to society and from time to time within the same society. In Puritan Massachusetts they would have included a Bible and a lighted log in the fireplace; in modern America they include an automobile and a television set. "Functional needs" are prerequisites for the achievement of an individual's own particular goals. The functional needs of a carpenter include a saw, plane, hammer, etc.

The argument from justice makes much of the point that the satisfaction of needs is very much more important than the satisfaction of a mere want.¹³ The peculiar strength of the case for satisfying needs seems to rest on the fact that a man's needs are beyond his power to control. Individuals seem this powerless, however, only with respect to biological needs. Functional needs are clearly contingent on a particular individual's goals, and by changing his goals

a man can alter his functional needs. Basic needs, too, are contingent on a type of want, widely-shared preferences regarding life styles. Only biological needs can be distinguished sufficiently clearly from mere wants to bear the weight of the emphasis of the argument from justice. Therefore, when it is said that justice requires needs be satisfied the reference must be to biological needs.

A final and crucial distinction is between what substantive results justice requires and what procedures are traditionally recommended to produce such results. Justice requires no more than the realization of a certain state of the world, one in which needs (i.e., biological needs) are satisfied. The traditional procedure for accomplishing this is to stipulate among distributive rules a requirement that society satisfy needs before other wants. A familiar example is the "utility floor" which is widely regarded as a necessary appendage to utilitarian distribution rules.¹⁴

In a society of Rational Men adhering to the Fairness Principle, needs are likely to be satisfied although not through traditional procedures. The satisfaction of needs is given priority over the satisfaction of mere wants, but this priority arises from individuals' choices rather than principle-based stipulation. The presumption behind such an argument is that Rational Men want the things they need and that the intensity of their wants corresponds to the seriousness of their needs.¹⁵ If biological needs go unmet for long the obvious consequence is death, which precludes

pursuit of most other goals. A Rational Man is by definition one who chooses means appropriate to the attainment of his ends; and biological needs are by their definition one necessary condition for the attainment of almost any goal. Each Rational Man will, therefore, allocate his resources in such a way as to satisfy his biological needs before pursuing other wants.

There is a difference between saying that each individual will satisfy his needs before his wants and saying that society will satisfy everyone's needs before satisfying anyone's wants. The difference arises for either of two reasons: (1) some individuals will fairly have more resources than others, and (2) it takes more resources to satisfy the needs of some individuals (eg., those who must periodically be treated with an artificial kidney machine).

Consider the conditions under which an individual would be unable to satisfy his needs for the first reason. His inability must result from the inadequacy of his "natural resources," i.e., those resources he has under his control without the aid or exploitation of others. A man can always fairly supplement his natural resources by helping others in a way that their gain outweighs his costs or by harming others so long as their losses are less than his gain. For an individual's resource stock to fall below its natural level, he must either have committed an error (which is something men operating at a subsistence level would be careful

to avoid) or have caused others such damage that compensating them forced him below the subsistence threshold. If a man cannot supplement his natural resources sufficiently to meet his biological needs, it is probably because the society as a whole is desperately impoverished. For an isolated desert tribe during a drought, the only choice is who lives and who dies. The Fairness Principle provides a criterion for deciding who should live (those who are useful to their fellows) and who should die (those who are simply useless or actually harmful) in situations where only some can live.

The second reason that some men might be in need is that they have extraordinarily expensive biological needs. Societies often do offer special assistance to handicapped individuals, and it is often thought a matter of social justice that they should do so. Such social aid programs can be partially explained (in terms of the Aggregative Principle) as social investments in human capital. Once restored to normal health, given special training, etc., these individuals might be able to lead very productive lives. A more plausible general explanation, however, is that all Rational Men would desire that such social aid programs be instituted as insurance against the unfortunate eventuality of their becoming handicapped, their having a handicapped child or dependent, etc.

7-2-c: Equality

The most basic feature of political policies said to promote equality is that they are equalizing. That is, they result in making individuals more nearly identical with respect to more attributes. An egalitarian impulse might manifest itself in either of two public policy recommendations. Egalitarians ordinarily demand a differential distribution of government's benefits and burdens with preferential treatment being accorded the underprivileged.¹⁷ In this way the differences between men can be reduced. Occasionally an egalitarian might be found demanding that each person receive an equal share of the burdens and benefits of government.¹⁸ On its surface such a policy might seem very compatible with a desire for equality; but while an equal division of benefits and burdens does nothing to increase existing inequalities neither does it do anything to reduce them. An equal division preserves an antecedent equality if one exists, but it also preserves any antecedent inequalities that happen to exist. Since inequalities outnumber similarities in most human populations, an equal division will usually not be an egalitarian's most favored policy. When he does recommend such a course, it is usually in an attempt to avert some alternative distribution that would give preferential treatment to those already privileged.

There are numerous dimensions along which men might be similar or different. Surely it is more important to achieve

equality in some respects than in others. Making men identical with respect to hair color would not be worth the cost of the dye although, alas, making them identical in skin color probably would be. Equalizing for the sake of equalizing cannot be the goal. A further complication is that making individuals identical with respect to some attributes precludes making them identical with respect to others. Given that men have different tastes, making two men identical with respect to possessions guarantees that they will differ in their enjoyment of them. There is a choice to be made here, and there can be little doubt that it ought be made in favor of equalizing satisfactions. Even on the traditional analysis, "equality" does not mean that individuals should receive identical treatment irrespective of their own choices in the matter.¹⁹

Egalitarian arguments might insist upon equalization of results. Alternatively, they might require only equality of opportunities, which assures no more than equality at the outset; whatever inequalities that subsequently emerge, by reason of ability or initiative or luck, are of no moment.²⁰ Neither line of argument favors giving men the same things. Giving two men something the first likes and the second does not only exaggerates the only inequality that really matters, the inequality in subjectively-defined well being. In the second case, everyone must be treated the same only in the rather trivial sense of allowing each individual to choose

his ends in life from the same unlimited set of alternatives open to everyone else. After those choices are made, providing men with equal opportunities to achieve the different ends they have chosen necessarily entails giving them different specific opportunities--the artist to paint, the scholar to read, the athlete to exercise.

These two arguments do not collapse into one another. Men with equal opportunities and identical inclinations will perform quite differently. Indeed, most areas of human endeavor are structured in such a way that some must fail for some to succeed. This difference, of course, might not matter if men received equal satisfaction from these differential achievements; but it seems wildly implausible that individuals achieving at much different levels could realize an identical quanta of satisfaction. Henry Clay's sarcasm aside, unsuccessful Presidential candidates are surely not as content with their accomplishments as are their victorious rivals.

While two egalitarian arguments are not the same, it is quite difficult to determine which is embodied in conventional political morality. An element of equalizing opportunities certainly does exist; it is manifested in the popular disdain for unearned (inherited) wealth and approval for severe inheritance taxes and death duties. Political morality also seems to demand equalization of results policies, such as progressive taxation, provision of inexpensive or

free medical services, etc. One must, however, be cautious in interpreting these latter bits of evidence--they could indicate either of two things. The most obvious interpretation is that equalization of results is morally required for its own sake. Another possible interpretation is that it is a necessary step in the equalization of opportunities. Ideally, men's opportunities would be equal at birth, that is, all would start with the same capital, same network of inherited social contacts, same potential to receive the education for which their intelligence qualifies them, etc. Obviously all living Americans and Britains did not start with equal opportunities at the time of birth. The equality of opportunities argument finds inequalities acceptable so long as actors actually did start with equal opportunities and made differential use of those opportunities. As things stand, however, the premise of the argument is not met and existing inequality is therefore condemned. In this case, the equality of opportunity argument requires that everyone now be given the equal opportunities they were denied at birth. The first stages of this process would be indistinguishable from the practical implication of equalizing results. The arguments differ only as regards what is to be done after equalization has been achieved: equal opportunities requires only a once-and-for-all equalization, whereas equalizing results requires a continuous equalization.²¹

There is a second inter-generational reason that equalizing opportunities might require the equalization of results. A child's opportunities are significantly affected by the ad-

vantages his parents have to confer on him. To some extent, his opportunities can be equalized only through equalization of selected components of his parent's welfare (i.e., equalizing their results).²² The crucial variable is how long the child is to be left under the exclusive control of his natural parents. Until "test tube babies" can be produced, the least that must be done to equalize opportunities of children by equalizing results of parents is providing every pregnant woman with an equally protein-rich diet; only in this way can be children have an equal opportunity to develop their mental capacities. If the rearing of children were left exclusively to the natural parents, it would be necessary to equalize parents' ability and inclination to provide their children with an education, useful social contacts, helpful character traits, capital, etc. Much of this is unnecessary because the modern state takes many of the duties of rearing the young upon itself. A splendid example is public education in the U.S.

There is a strong Rational Man argument for equalizing opportunities couched in terms of the Aggregative Principle. As much good as can be produced will be produced if: (1) individuals start with equal opportunities; (2) they are rewarded for (and only for) actions that benefit others; and (3) the Fairness Principle is enforced. The third provision forces externalities to be internalized and the second guarantees that merit (as detailed in Section 7-2-a) is

rewarded, but it is significant that these two provisions by themselves are not sufficient to guarantee that efficiency will be achieved. Consider what might happen without equal opportunities: a man with less talent might start with more original resources; a more capable but less privileged man will have to perform all that much better to overcome his original liability. Unequal opportunities are likely to result in an inefficient use of important human resources, as is familiar from discussions of the economic costs of racial discrimination. A society of Rational Men will not countenance such a waste and will initiate a system of equal opportunities to prevent it.²³

In a society where individuals started with very unequal opportunities a leveling (equalization of results) policy might be justified in similar terms. By making present opportunities equal the efficiency of future operations is guaranteed. This benefit must, of course, be set against the costs of such a leveling policy, which would include both administrative costs and losses resulting from decreased productivity of the demoralized privileged classes. If the original inequality of opportunities is substantial, however, it seems likely that the gained efficiency would outweigh these losses.

There is an even more compelling Rational Man argument for equalization of results policies in a "second best" world. Suppose that individuals are not always rewarded according

to their performance, or suppose that they are not necessarily given opportunities to make full use of their potentials. To the extent luck plays a role in the distribution of societal goods, Rational Men would embrace equalization of results policies again as a matter of insurance.²⁴ They would be especially fond of "utility floor" proposals such as the guaranteed annual wage, food stamps, housing subsidies and nationalized health care for roughly the same reasons they would like to limit how much they might be exploited by their government (see Section 3-6).

NOTES

¹ This definition of formal justice resembles the Aristotelian definition of distributive justice; see Nicomachean Ethics, Book V, c.III and The Politics, III, ix. Similar modern analyses include Chaim Perelman, The Idea of Justice and the Problem of Argument, trans. John Petrie (London: Routledge and Kegan Paul, 1963); and William Frankena, "The Concept of Social Justice," Social Justice, ed. Richard Brnadt (Englewood Cliffs, New Jersey: Prentice-Hall, 1962), 1-29. This is the standard of equity in Brian Barry, Political Argument, 152 ff. and in J.R. Lucas, The Principles of Politics (Oxford: Clarendon Press, 1966), Section 29. The same concept is called equality by Felix Oppenheim, "Egalitarianism as a Descriptive Concept," American Philosophical Quarterly, 7 (1970), 143-52 and John Wilson, Equality (London: Hutchinson, 1966).

² See Perelman; H.L.A. Hart, The Concept of Law, esp. pp. 153-63; S.I. Benn and R.S. Peters, Social Principles and the Democratic State (London: Allen and Unwin, 1959), Chapter 5. James I. MacAdam, "The Precepts of Justice," Mind, 77 (1968), 360-71 agrees these are the two principles of justice, but he emphasizes that the connections between the two principles are quite unclear; perhaps one must go so far as to say they are two independent principles.

³ This argument is clearest in Sir Isaiah Berlin, "Equality," Proceedings of the Aristotelian Society, 56 (1955-6), 301-26; and Felix Oppenheim, "Egalitarianism as a Descriptive Concept." Something very much like it is implicit in the familiar suggestions that, if one accepts the distinctions between men that the law itself draws, "no law can be unjust" (Hobbes, Leviathan, Chapter 30).

⁴ The Fairness Principle, like any social rule, can be evaluated according to these formal principles. Using its standard of equality (how much individuals benefit or harm others), it is formally just (it requires that those inflicting the same measure of suffering pay the same compensation) and it is formally equitable (a man who causes twice as much suffering must pay twice as much compensation). Notice that both of these applications of the formal rules require interpersonal utility comparisons whereas the Fairness Principle itself does not. One who denies the possibility of such comparisons must simply conclude that these formal tests cannot be applied to the Fairness Principle.

⁵ John Wilson, Equality, 81 ff. argues that since no two individuals can ever be identical with respect to all attributes formal justice ("treat like cases alike") must always be irrelevant. This result certainly does not follow if "likeness" is treated as a nominal rather than an ordinal category. Wilson correctly observes that men with eyesight 20-20, 20-40, 20-100 do not have identical eyesight; but they might be identically capable of safely driving an automobile, a skill jeopardized only when eyesight is worse than 20-200.

In any case, were it conceded that no man is truly "like" any other not much would be lost. Formal justice becomes irrelevant--there are no likes to be treated alike--but equity works doubletime to take its place. If no two men are alike, then everything becomes a case in equity, a matter of treating men commensurate to their differences.

⁶ William T. Blackstone, "The Meaning and Justification of the Equality Principle," Ethics, 77 (1967), 239-53 at 241. Similarly, the U.S. Supreme Court writes, "The Equal Protection Clause does require that, in defining a class subject to legislation, the distinctions that are drawn have 'some relevance to the purpose for which the classification is made'" (Rinaldi v. Yeager, 384 U.S. 305, 308 [1966]).

⁷ On the general problem of legislative purpose, see Gerald C. MacCallum, Jr., "Legislative Intent," Yale Law Journal, 75 (1966), 754-87. For the special problems in an application

such as this, see the Note, "Legislative Purpose, Rationality and Equal Protection," Yale Law Journal, 82 (1972), 123-54.

⁸ Such criticisms are made by H.L.A. Hart, The Concept of Law, 156-7, 251; Blackstone, "The Meaning and Justification of the Equality Principle"; and R.E. Ewin, "On Justice and Injustice," Mind, 79 (1970), 200-16. The U.S. Supreme Court will strike down legislation if it works toward an impermissible goal or if it fails to work toward some goal which is mandatory for any legislation in the field; see Note, "Legislative Purpose, Rationality and Equal Protection," Yale Law Journal, 82 (1972), 123-54.

⁹ Michael Young, The Rise of the Meritocracy (Harmondsworth: Penguin, 1961).

¹⁰ D.D. Raphael, "Conservative and Prosthetic Justice," Political Studies, 12 (1964), 149-62 uses the example of the thief to make the same point. See also Joel Feinberg, "Economic Income as Deserved," Doing and Deserving, (Princeton: Princeton University Press, 1970), 88-94. In the short term there is no guarantee that merit and works are correlated. The more meritorious man might have a run of bad luck or the less meritorious might have good luck. In the long run, however, these effects will average out and works will reflect merit.

This makes the distribution of social goods at least partially dependant upon the possession of natural assets distribution of which is, admittedly, arbitrary from a moral point of view. This does not necessarily morally contaminate the distribution of goods, as Robert Nozick, "Distributive Justice," Philosophy and Public Affairs, 3 (1973), 45-126 ably argues.

¹¹ John Rawls, A Theory of Justice, Section 48.

¹² Benn and Peters, Social Principles and the Democratic State, 162-70 follow a similar analysis of the concept of "need" with this typology. See also David Braybrooke, "Let Needs Diminish that Preferences May Prosper," American Philosophical Quarterly Monographs, 1 (1968), 86-107; and A.M. Honoré, "Social Justice," Essays in Legal Philosophy, ed. Robert S. Summers (Oxford: Blackwell, 1968), 61-94.

¹³ See Braybrooke, Ibid.

¹⁴ Nicholas Rescher, Distributive Justice does little more than exercise our intuitions that utility must be supplemented with some distributive standards.

15 Discussions of "false consciousness" invoke the concept of a "need" to deny precisely this presumption, to distinguish between needs and wants. In part, the theory is saved by the stipulation of rationality of actors--Rational Men would want what they need. The following chapter's discussion of "paternalism" considers the possibility that men to not want what they should and what should be done in such situations.

16 What is said of biological needs applies equally well to psychological compulsions. Christian Bay, "Needs, Wants and Political Legitimacy," Canadian Journal of Political Science, 1 (1968), 241-60 defines a need as "any behavior tendency whose continued denial or frustration leads to pathological responses." Rational Men would attempt to satisfy such needs because pathological responses are likely to obstruct attainment of a variety of goals.

17 A.M. Honoré, "Social Justice;" G.W. Mortimore, "An Ideal of Equality," Mind, 77 (1968), 222-42.

18 Sir Isaiah Berlin, "Equality," Proceedings of the Aristotelian Society, 56 (1955-6), 301-26.

19 Honoré is gratifyingly clear on this point, writing, "Discrimination is justified ... on the basis of the choice of the person to be subjected to discrimination" (page 94). Berlin uses the principle of "equal respect" to capture the element of choice. Stanley Benn, "Egalitarianism and the Equal Consideration of Interests," Nomos IX: Equality, ed. J.R. Pennock and John W. Chapman (New York: Atherton, 1967), 61-78 uses "interests" for the same purpose.

20 See, eg., Daniel Bell, "Meritocracy and Equality," Public Interest, 29 (1972), 29-68; and Charles Frankel, "Equality of Opportunity," Ethics, 81 (1971), 191-211. John H. Schaar, "Equality of Opportunity, and Beyond," Nomos IX: Equality, 228-49 correctly perceives that equality of opportunity leads to very unequal results.

21 See, eg., Thomas Nagel, "Equal Treatment and Compensatory Discrimination," Philosophy and Public Affairs, 2 (1973), 348-63 and Judith Jarvis Thompson, "Preferential Hiring," Philosophy and Public Affairs, 2 (1973), 364-84.

22 Perhaps one can go so far as to say it is necessary to equalize parents' achievements in order to equalize their children's opportunities. The Coleman Report on U.S. education

found, for example, that the only thing consistently correlating with a child's school achievements (within racial groups) was the education of their parents. See the report, Office of Education, Equality of Educational Opportunity (Washington, D.C.: Government Printing Office, 1967).

23 A.C. Pigou, The Economics of Welfare, 4th edition (London: Macmillan, 1932), Part IV, Chapter 12 recommends a transfer to the poor on these grounds although he is also worried (Part IV, Chapters 9 and 10) about the effect of both the poor and the rich expecting such transfers. See also Kurt Klappholz, "Equality of Opportunity: Fairness and Efficiency," Essays in Honour of Lord Robbins, ed. Maurice Peston and Bernard Corry (London: Weidenfeld and Nicholson, 1972), 246-89. The potential compatibility between meritocratic reward systems and equality is recognized by Roger Hancock, "Meritocratic and Egalitarian Justice," Ethics, 80 (1970), 165-9. The argument depends on the distinction between equalizing wealth (which is necessary for equal opportunities) and equalizing income from work (which would preclude rewarding meritorious performances); Lord Robbins, "Equality as a Social Objective," Politics and Economics (London: Macmillan, 1963), 79-90 makes much of this distinction.

24 One of the pervasive themes in Christopher Jencks, Inequality: A Reassessment of the Effect of Family and Schooling in America (New York: Basic Books, 1972), is that socio-economic success is largely a function of luck, that is, it cannot be explained by any of the variables taken into account in Jencks' model. One must be cautious in interpreting this result, however, because Jencks uses no measures of "motivation," "effort," etc. Thus, the residual might be due to the operation of the merit standard, merit consisting in IQ plus effort.

CHAPTER 8: FREEDOM AND RIGHTS

This chapter analyzes the concepts of freedom and rights. It demonstrates that Rational Men would desire freedom and rights, that they would organize their society in such a way as to enable them to enjoy these goods, and that this is consistent with if not implicit in the Fairness Principle. The Fairness Principle's argument for freedom, developed in Section 8-1, might seem to preclude all forms of paternalism. Section 8-2 argues that certain restricted forms are permissible within that principle and that those exceptions are adequate to satisfy our intuitions that paternalism is occasionally justifiable. Section 8-3 analyzes the notion of rights and why Rational Men want rights. The fourth section analyzes human rights, which are seen to involve both freedoms and rights. Again, a Rational Man analysis is provided to explain the allure of arguments for human rights.

8-1: Freedom

Modern philosophical discussions of freedom are typically cast in terms of an argument over the choice between two different concepts of freedom. In Berlin's terms, negative freedom ("free from ...") entails only the absence of restraints whereas positive freedom ("free to ...") entails additional elements such as presence of opportunities, capacities, awareness, etc. MacCallum, however, has recently

demonstrated that both parties to the dispute use essentially the same concept of freedom and simply emphasize different components of it.

Taking the format "x is free from y to do/become z," x ranges over agents, y ranges over such "preventing conditions" as constraints, restrictions, interferences, and barriers, and z ranges over actions or conditions of character or circumstance.

The argument between proponents of positive and negative freedom is essentially a dispute over what counts as a "preventing condition." This, in turn, involves a disagreement over human nature, what in fact restrains men and what does not. Proponents of positive freedom would claim, for example, that psychological compulsions function as restraints while advocates of the negative concept would recognize only those restraints imposed by the actions of others.

A principle which is fundamental to the negative conception but also compatible with the positive formulation is that a man's freedom can only be infringed by constraints imposed by other human actors. Natural incapacities or disabilities cannot make one unfree to do or become something. The infirmity of old age makes most octogenarians unable to climb mountains, but it would be quite odd to say that they were unfree to do so. While advocates of the positive concept often reject this view, there is no logical need for them to do so. Their case really depends on their broad view of restraints rather than on any particular view about

how those restraints came to be imposed.

For present purposes the more important question is why men value freedom. Since both positive and negative freedom involve essentially the same basic concept, it is possible to proceed to that question without having resolved definitional details.

Empirical men seem to value freedom for the same reasons that Rational Men would. The reason a Rational Man wants to be free to do something is that he presently wants or might in the future want to do that thing.⁴ Unfreedom implies the presence (and freedom the absence) of certain types of impediments to a course of action. Those impediments might actually prevent a man from doing what he wants, but at the very least they will force him to invest more resources than he otherwise needs invest to do what he wants.⁵ Rational Men would not and empirical men do not favor such obstacles.

A Rational Man has no very compelling reason to object to being made unfree to do something that he is absolutely certain that he will never want to do.⁶ Such absolute certitude, however, is unlikely if not impossible. Since no one can ever be all that certain about his future desires, the point is better phrased probabilistically: the more improbable an actor thinks it is that he will ever want to do x the less he minds being made unfree to do x.

This amounts to an argument that Rational Men value freedom as an instrument and not as an end. The more things a man is free to do the wider his range of choices, and the

wider his range of choices the higher the probability of things he wants to do being included among his choices. Empirical men also seem to value freedom for the choices it opens to them and not to value freedom of choice for its own sake. Notice the odd consequences of assuming the converse were true. Suppose there are three goods, A, B, and C, and that a man prefers A to B, B to C, and A to C. If he values freedom of choice for its own sake, there must be some A, B and C sufficiently "close" in his preference ranking such that he would rather have a choice between B and C than be given A outright without a choice. (That is, there must be some A and B such that $Utility_A > Utility_B$ but $Utility_B > Utility_{choice} + Utility_A$.) Surely an ordinary individual facing such a situation would rather be given his first choice than be given a choice between his second and third choice goods.

A Rational Man demands to be treated as an agent capable of choosing his own goals. He insists that each man is the best judge of his own interests. There is, of course, a fundamental difference between choosing ends and choosing means to ends. The latter requires a body of knowledge about the empirical world that the former does not. But the two different types of choice might easily become conflated in the political discourse of a society, and the issue might be phrased in terms of whether men are capable of making choices per se. Insofar as these two different

issues do become entangled, a Rational Man would tend to demand more freedom of choice between means than would be efficient for him to have in order to protect his freedom to choose his own ends. In actual political discourse these issues do tend to become confused, and many of the arguments making it seem that men value freedom of choice for its own sake might be explained in this way.

A Rational Man's objection to being made unfree is that the unfreedom makes him worse off. This is most clearly true when someone else interferes with his choice of goals. The presumption embodied in the Fairness Principle is that each man is the best judge of his own interests and will choose to pursue those goals which offer him most potential satisfaction. If another man interferes with his choices of goals and as a result he pursues some other goals, then their interference has clearly made him worse off because he no longer pursues his optimal goal. The satisfaction he attains from achieving other goals is presumably less than that he would have realized had he pursued the goal he would have chosen for himself. To the extent they also suppose that each man is the best authority on the empirical facts of the situation in which he finds himself, Rational Men would also object to interference with their freedom to choose means to their ends. This latter claim is, however, necessarily more limited as is discussed in Section 8-2.

Freedom is one good which a society cannot maximize.

As Bentham observes, "no liberty can be given to one man but in proportion as it is taken away from another. All coercive laws, therefore, and in particular all laws creative of liberty, are as far as they go abrogative of liberty."⁷ Albert is free from assault by Bernard only insofar as Bernard is unfree to assault Albert. Freedoms in general can only be protected at the expense of other freedoms, and society must have some basis for determining which ones to protect at the expense of which others.

Philosophical discussions of such choices traditionally follow John Stuart Mill's suggestion that everyone ought to be free to do whatever he wants so long as it does not harm anyone. Here Mill simply anticipates Pareto: given Mill's assumption that each man is the best judge of his own interests (both as regards ends and means), then leaving a man free to do what he wants so long as it does not harm anyone else makes one man (the actor) better off without making anyone worse off. Many philosophers reject this assumptions and argue in favor of paternalism, making individuals unfree to do things which would cause harm to themselves. But the concept of harm, either to self or to others, remains at the core of justifications for restricting freedoms.

Rational Men would join philosophers in approving of arrangements allowing everyone freedom to do whatever does not harm anyone. Each one gains by being free to do some-

thing he likes which harms no one else. No one loses from allowing others similar liberty because, ex hypothesi, his own welfare would be unaffected by their actions.

Similarly, the Fairness Principle starts from a hypothetical baseline in which no one's actions affect the well being of anyone else, and this Principle leaves a man entirely free to do anything that will not harm anyone else. If a man proposes to do something that will harm someone else then Fairness does impose an obstacle to his doing that action--he must adequately compensate all those who will suffer as a result of his actions. Fairness does not completely block any action that harms others but, by requiring compensation, it does make such a course of action "substantially less eligible;" i.e., it restricts a man's freedom to pursue such a course of action. The greater the harm that actions would cause the greater the obstacles that the Fairness Principle imposes and the less free the man is to do them. This mirrors the conventional philosophical wisdom that there exists a "presumptive case" for freedom, that the presumption is conclusive when no one will be harmed, but that the presumption might be (but is not necessarily) overcome whenever others are harmed.

The Fairness Principle treats freedom as one of many goods a Rational Man would desire. Fairness guarantees that each individual will start with a certain amount of this good (freedom to do whatever would not cause harm), and it allows

him to trade this good for other goods as he pleases. As already discussed, he may fairly extend his freedom by adequately compensating anyone who suffers as a result of his actions; that is to say, he may trade other compensatory goods for more freedom. He may also agree to restrict his freedom in order to obtain something else. Parties to contracts, for example, agree to restrictions on their freedom over a limited range of actions, often in exchange for pecuniary gains. The Fairness Principle, of course, leaves questions of adequacy of compensation to the individuals concerned. If a man thinks freedom is of supreme importance he will only trade freedoms for other freedoms. But most men do not seem to hold freedom in such high esteem and are willing to trade it for all sorts of other goods.⁸

8-2: Paternalism

The proposition that there ought to be restrictions on a man's freedom to do what would harm someone has a powerful intuitive appeal. It is clear that the Fairness Principle affords individuals protection against losses inflicted by others' actions, but it is not clear that it affords a man any protection against himself. By insisting that each man is the best judge of his own interests this Principle seems to preclude by definitional fiat the possibility that a man can intentionally cause himself harm.

The assumption that each man is the best judge of his

own interests makes everyone sovereign only with respect to his choice of goals. It is inconsistent with this principle to suggest that a man would be harmed by attaining his own goals.⁹ But since real men operate under conditions of imperfect information, occasionally have fits of rage, etc., it is quite possible that they will err in their selection of means to attain these ends. A man can harm himself by choosing means grossly inappropriate to the realization of his self-selected goals, and paternalistic restrictions on his freedom to do so would be consistent with the Fairness Principle.

This is to distinguish between "weak paternalism" and "strong paternalism."¹⁰ The "weak" variety, the one which is justifiable from within the Fairness Principle, works with the individual's own preferences for goals. Preventing a man from harming himself is understood as keeping him from doing something the consequences of which he would himself regard as undesirable. "Strong paternalism" involves the imposition of some external standard of what is harmful and what is desirable. Although an individual's actions are certain to result in the attainment of his goals, strong paternalism justifies interference on the basis that he should want something different, that attaining his goals would really cause him harm. The Fairness Principle cannot approve of this type of paternalism.¹¹

Judgements of weak paternalism presuppose knowledge of an individual's goals. Only if his preferences for goals

are known is it possible to determine whether his chosen actions are likely to have the consequences he desires. If a man's preferences are unknown, problems are created and a slightly stronger version of paternalism might be justifiable. Suppose the choice is between interfering with an individual's actions and allowing him to do something which, although he could not know it in advance, would have results that most people would consider disastrous. If the danger were sufficiently large and the view that it was undesirable sufficiently prevalent, it might be reasonable and fair to attribute the "common" preferences to the man about to engage in the dangerous practice and prevent him from doing it. J.S. Mill, for example, was willing to allow officers seize a man to prevent him from crossing an unsafe bridge provided there was no warning sign on the bridge and there was no time to shout to him.¹² The significant difference between this form of paternalism and true strong paternalism is that the former only justifies a provisional interference. Once the man is advised of the danger of crossing the bridge the choice of crossing it or not must be his own.

The core cases of justifiable paternalistic interference do seem to involve either "weak" or "provisional" paternalism. Men are prevented from taking rash actions in a fit of rage on the grounds that, upon reflection, they would behave differently. A fever-crazed patient is prevented from doing anything which would have consequences

which a man with typical preferences for goals would regard as disastrous; but when he has recovered from his illness and is again capable of considered judgement there is no justification for further paternalistic interference. Similarly, children are guided by their parents until reaching the age of maturity when they become capable of making reasoned judgements.

8-3: Rights

Just as Rational Men would desire freedom so too would they desire the social institution of right-holding. Before their reasons can be explored, however, the concept of a right must be explicated. A right is a special kind of interpersonal relationship growing out of the rules of a normative system. Rights are logically correlative with duties: the rules giving Alfred a right against Bernard will necessarily impose on Bernard a corresponding duty with respect to Alfred. (The converse is not true--not every duty implies a right.) By definition, to have a right is to have under the rules of the normative system power to demand performance of or to terminate those obligations correlative with the right. An agent is termed a legal "right-holder" by virtue of this legally-recognized power to choose between demanding and releasing (or waiving).¹³

The most familiar example of a right arises in the case of the debtor. If one man lends another £10, he has a right

to be repaid the £10 by his debtor. If the debtor fails to do his duty, the lender has legal power to demand repayment in court and he has legal power to release the debtor from his obligation by, for example, destroying his IOU.¹⁴

Some philosophers suppose that there is an analytic connection between benefiting from and having a right to a duty-bound performance. The case of third party beneficiaries conclusively refutes this argument. If a man contracts with a nursing home for the care of his aged mother, it is the mother who will benefit but the son who has a legal right to performance of the institution's contractual obligations. Benefiting from a duty-bound performance cannot be a sufficient condition of right-holding because the mother benefits without having a right; and it is not a necessary condition because the right-holding son does not necessarily benefit from the performance of the duty.¹⁵

A qualified form of the beneficiary thesis has been advanced. Instead of focusing on who actually does benefit, this analysis identifies the right-holder as the direct, intended beneficiary of another's duty-bound performance. That is, if A has a duty to do X to B, B has a right to performance X from A if and only if B is the direct, intended beneficiary of A's doing X.¹⁶ This analysis is ambiguous on the question of whose standards of benefit and detriment are to be controlling; and no matter how the ambiguity is

resolved the inevitable result is that the analysis makes right-holders of some people other than those to whom legal systems ordinarily assign rights. If it is B's standards that control, then the theory gives him rights to too many things (eg., the mother in the above example would have a right against the nursing home whereas under Anglo-American law she has no such right). Using the standards of anyone else (A, the rule-makers, etc.) would have equally unsatisfactory results. Both legislators and A might think X benefits B without B thinking X benefits him. Ordinary analyses would dub B a right-holder only if he has legal power to waive A's duty-bound performance in such circumstances, but the qualified beneficiary theory insists that he is a right-holder by virtue of others' intentions whether or not he possesses this waiver power.

The conclusion must be that there is no analytic link between right-holding and benefiting. There is, however, a strong contingent probability that the two will go together, and it is for this reason that Rational Men will desire to be right-holders. The central feature of the definition of a right is that the holder has power either to demand or to waive a duty-bound performance. In Hart's phrase, "one who has a right has a choice respected by the law."¹⁷ As Section 8-1 suggests, the existence of a choice will ordinarily benefit the chooser. In this case, the right-holder can demand others perform what their duty re-

quires when that would benefit him; he can waive such duty-bound performances when they would damage him; or he can bargain with his waiver power, offering to release others from their duty to do X if they will agree to do something Y he would rather they did. Thus, the right always constitutes a potential advantage for its holder even though he does not always benefit from it (eg., he may not know he has the right and fail to avail himself of the opportunities it presents) and he does not uniquely benefit from it (eg., his mother might also benefit, as in the nursing home example).¹⁸

Since rights constitute potential advantages to their holders, it is obvious why Rational Men would like to have rights--like any other instrumental good (such as money) rights help men get what they want. But this does not explain why a society of Rational Men would be especially fond of an institution creating this special variety of benefits. The explanation can be made in terms of the Fairness Principle. When one man's actions affect the well being of another, then Fairness dictates that some individual (the victim or the beneficiary) should benefit at the expense of a specific other (he who inflicted harm or provided benefit). It is important to fairness, furthermore, that the sacrifices actually do benefit those whom they are designed to benefit; fairness does not approve of needless sacrifices, defined as those which benefit no one. The institution of rights is important to the Fairness Principle

because it helps guarantee that needless sacrifices will be minimized. A right-holder can demand duty-bound performances that will benefit him, waive duty-bound performances that will harm him or use his waiver power to bargain for a performance that will benefit him more and cost the duty-bound individual no more.

It would be unfair to confer rights on every individual whom the Fairness Principle dictates is to benefit at another's expense. The reason is that several other individuals might also fairly benefit from that duty-bound performance. In such a case, it would be unfair to allow any one of the beneficiaries to release the duty-bound individual from his obligation. The Fairness Principle, then, assigns an individual a right to another's duty-bound performance if considerations of Fairness dictate that he and he alone should fairly benefit from that performance.

8-4: Human Rights

Arguments for "human rights" make use of both the concepts of freedom and rights. Once the notion of a human right is clarified, a Rational Man's desire for institutions guaranteeing protection of human rights can be explained.

The object of arguments for human rights is clear enough: they urge the protection of certain freedoms. The most complete and authoritative listing of human rights is

contained in the United Nations Universal Declaration of Human Rights. "Political and civil rights," such as the right to life, liberty and security of person, the prohibition on torture and cruel, inhuman or degrading treatment, are all essentially negative freedoms. "Economic and social rights" refer to positive freedoms involving such things as a standard of living adequate for the health and well being of oneself and of one's family, an education, security in the event of unemployment, sickness, disability, etc.

There are two distinct ways of protecting freedoms, and it is unclear which is implied in talk of human rights. One rather straightforward way to guarantee X's freedom to do A is to prohibit Y from interfering with X's doing A. When human rights are codified in Bills of Rights, Y is ordinarily specified as the State and its agents, but the question of what counts as interference with X's doing A is usually left for the courts to determine. An alternative strategy for protecting X's freedom to do A is to give him the right to be free to do A. The phrase is awkward but the underlying logic is tidy. For X to have a right to be free to do A, someone Y must have a duty to refrain from interfering with his doing A; and X must have legal power either to demand or to waive performance of that duty. Again, Bills of Rights specify the State and its agents as Y but leave the question of what counts as an interference open to the

court's interpretation.¹⁷ Significantly, the waiver must involve more than X simply not doing what he is free to do (eg., speak in a public assembly, publish a newspaper). X waiving his right to Y's duty-bound performance (not interfering with X's doing A) amounts to giving Y permission to interfere with his doing A.

Traditional "natural rights" are not rights at all but rather protect an individual's freedoms by prohibiting interference by others. The defining characteristic of a right is that the holder can either demand or waive what is his by right. According to traditional definitions, human rights are "inalienable," that is, they cannot be waived. This characteristic seems to be central to traditional notions of natural rights and not merely some peripheral feature. Since natural rights cannot be waived they cannot be rights. They are better viewed as claims. The claim of individual X to A is often (but not always) a claim against some Y (usually civil society in this context) to provide X with A insofar as is possible. And the claim is inalienable, meaning X cannot release Y.²¹

A Rational Man has good reasons for desiring inalienable claims to freedoms. By prohibiting any governmental interference whatsoever with certain aspects of life, an individual limits his risk of being exploited by his government or by his fellow citizens acting through the government. Such reasoning has already been discussed in Section 3-6.

Such an explanation is especially plausible given the content of claims that typically tend to work their way into Bills of Rights. Claims are offered this special form of protection either because they have recently been subject to especially flagrant governmental abuse (eg., quartering soldiers in private residences, prohibited by the Amendment to the U.S. Constitution) or because citizens suppose that the things protected are especially crucial to their well-being (eg., life, liberty, free exercise of religion).²²

Many modern Bills of Rights protect freedoms in the second way, by actually conferring rights on citizens. Many of the rights guaranteed by the first ten amendments to the U.S. Constitution, for example, can be waived. Probably the most familiar example of such a waiver involves the Fifth Amendment guarantee against self-incrimination. A suspect cannot constitutionally be compelled to confess to a crime, but if he does freely waive his right and agree to confess this evidence may properly be used against him in court. Similarly, if a man testifies in his own behalf at his trial he has waived his Fifth Amendment rights and the prosecution is entitled to question him even though they could not otherwise compel him to testify.

A Rational Man would like to have a right to a freedom because the right assures him protection for his freedom and more. Y has a duty not to interfere with X's doing A, and

right-holder X can demand performance of that duty. But right-holder X can also waive this right and release Y from that duty. If he only had a protected freedom, X simply has a choice between doing or not doing A. If he has a right, X has that choice and in addition the choice of Y doing or not doing B. (Since B is interfering with X's doing A it would be rare for X actually to benefit directly from Y doing B; but X might be able to use his waiver power here to bargain with Y to get Y to do something else X likes better than Y not doing B.) A right to a freedom gives the right-holder more choices and hence more potential benefits than merely a protected freedom, so Rational Men will ordinarily prefer to have a right to be free to do A.

NOTES

¹ Isaiah Berlin, Two Concepts of Liberty (Oxford: Clarendon Press, 1958). Maurice Cranston, Freedom, A New Analysis (New York: Basic Books, 1953), 4, argues that "free to" and "free from" are just opposite perspectives on the same situations. I am free to do something (eg., meet you for lunch in the pub) if I am free from anything that would prevent me from doing it (eg., prior engagements, legal drinking ages, etc.). Cranston is, of course, correct if (but only if) both these phrases are used to refer to the absence of the same types of restraint. Usually they do not.

² Gerald C. MacCallum, Jr., "Negative and Positive Freedom," Philosophical Review, 76 (1967), 312-34. See also Joel Feinberg, "The Concept of Freedom," Social Philosophy (Englewood-Cliffs, New Jersey: Prentice-Hall, 1973), 4-19.

³ The distinction between "unable" and "unfree" is borrowed from Stanley I. Benn and William L. Weinstein, "Being Free to Act and Being a Free Man," Mind, 80 (1971), 194-211. See also Felix E. Oppenheim, Dimensions of Freedom (New York: St. Martin's Press, 1961) arguing that freedom is essentially an interpersonal relationship.

⁴ Oppenheim, 211-28, does an excellent job of cataloguing common intuitions about the value of freedom; most support this interpretation.

⁵ Person P is less free to do act A if person Q imposes an obstacle that makes doing A a "less eligible" course of action. It need not actually prevent P from doing A in order to constitute a restriction on his freedom. See Robert Nozick, "Coercion," Philosophy, Politics, and Society, 4th Series, ed. Laslett, Runciman, and Skinner, 101-35 at 102; and H.L.A. Hart and A.M. Honoré, Causation in the Law (Oxford: Clarendon Press, 1959).

⁶ Definitions of freedom frequently err in identifying "being free" with "feeling free." A man feels free so long as there are not man-made obstacles to his doing what he wants to do; being free implies that there are no obstacles on him at all. The two things are obviously not the same, although Benn and Weinstein, 195, come perilously close to identifying them. A saintly priest will never be inclined to murder his bishop, but murder laws impose a duty on him to refrain from doing so; and this, on Hohfeldian terms, is the antithesis of being free to do so. (Wesley N. Hohfeld, Fundamental Legal Conceptions (New Haven: Yale, 1923).) It does, however, seem reasonable to suppose that men mind not being free less when they feel free.

Although a Rational Man has no compelling reason to object to such interferences, he might have several weak ones. One (being treated as a man capable of choosing) is discussed below. Another is that a man might like to "keep in practice" so his mental processes are keen when he has a real choice to make.

⁷ Jeremy Bentham, "Anarchical Fallacies," Works, ed. John Bowring, II. See also Feinberg, Social Philosophy, 22 ff.

If the law makes no regulations one way or the other, two men might be legally at liberty to do the same thing (eg., pounce on a £5 note on the sidewalk). But, in a larger sense, neither is entirely free to do so since each is limited by the strength of the other, his speed, etc., in his attempt to seize it. Furthermore, any effort to enact laws protecting one man's claim to the £5 note would necessarily limit the other's freedom to pounce on it.

⁸ cf. Christian Bay, The Structure of Freedom (Stanford: Stanford University Press, 1958). Even if men do attach supreme importance to freedom, that does not necessarily disconfirm the argument that they value it as an instrument and not as an end. They might be terribly uncertain of their future preferences or terribly averse to risks.

⁹ Of course, it is possible to criticize an individual for poor planning, for pursuing the wrong goal first so that over a period of time the individual will realize less than maximal possible goal attainment. Such a critique is clearly working within the individual's preferences for goals.

¹⁰ See Joel Feinberg, "Legal Paternalism," Canadian Journal of Philosophy, 1 (1971), 105-24, and John Stuart Mill, On Liberty (New York: Liberal Arts Press, 1956).

¹¹ Interfering with an individual's behavior on the grounds that he is likely to change his goals might be weak or strong paternalism, depending on the circumstances. If the claim is that he will (or probably will) change his goals without outside interference then it is weak; if there is an attempt to provoke the change then it is strong. There is always the danger that weak paternalism of this form will involve a self-fulfilling prophecy: interference is justified on the grounds that the actor is likely to change his goals, and he is likely to change his goals on account of the interference.

¹² Mill, On Liberty, 117. If the interference would clearly preclude the individual from taking advantage of a "once in a lifetime" opportunity, such provisional paternalistic interference is less easy to justify. It might still be justifiable, but the interfering agent will have to be substantially more confident that something the protected agent will think very bad will occur without the provisional interference.

¹³ Hohfeld, Fundamental Legal Conceptions. H.L.A. Hart, Definition and Theory in Jurisprudence (Oxford: Clarendon Press, 1953). It is important to note that having power to change the legal status of an obligation is not the same as having, eg., physical power to secure compliance; Hart argues, "A paralyzed man watching a thief's hand close over his gold watch is properly said to have a right to retain it as against the thief, though he has neither expectation nor power in any ordinary sense of the word" (page 10).

One relatively minor difficulty arises with this definition because legislators have power to terminate all legally-imposed

obligations by repealing the laws giving rise to them. Although they have this power, it seems wrong to say that if Smith and Jones sign a contract then the legislature and Smith have a right against Jones that its terms be carried out.

¹⁴ Since the right-holder has this power by virtue of legal rules he can be identified whether he uses the power or not. "Power" is often defined in such a way that it is impossible to determine what powers a man has until he actually uses them. In Dahl's formulation, for instance, if one man always wants another to do what the other would have done anyway there is no way of telling whether the first has any power at all over the second.

¹⁵ On Bentham's beneficiary theory, see H.L.A. Hart, "Bentham," Proceedings of the British Academy, 48 (1962), 310-20. The example of third party beneficiaries is drawn from H.L.A. Hart, "Are There Any Natural Rights?" Philosophical Review, 64 (1955), 175-91 at 180.

¹⁶ David Lyons, "Rights, Claimants and Beneficiaries," American Philosophical Quarterly, 6 (1969). For a reformulation of Bentham's theory along these lines, see H.L.A. Hart, "Bentham on Legal Rights," Oxford Essays in Jurisprudence, Second Series, ed., A.W.B. Simpson (Oxford: Clarendon Press, 1973), 171-201.

¹⁷ Hart, "Bentham on Legal Rights," 197.

¹⁸ Fairness predicts that right-holders will be either victims or benefactors. Whether this prediction is valid is a matter for empirical testing. There is nothing in the notion of a right to make it an analytic truth. But there are certain provisions contained in the legal codes of Britain and the U.S. that increase the probability of it being true: a simple contract must involve consideration if it is to be legally binding. (See Appendix to Chapter 5: "Legal Reflections of Fairness Principle.")

¹⁹ Where Fairness dictates that several individuals should benefit from a duty-bound performance, they could be given a right jointly to demand or waive the performance.

²⁰ Traditional objections to natural rights theories include: Bentham, Anarchical Fallacies, Works, ed., Bowring, II; Margaret Macdonald, "Natural Rights," Proceedings of the Aristotelian Society, 47 (1947), 225-50. Contributors to

D.D. Raphael, Political Theory and Rights of Man (Bloomington: Indiana University Press, 1967) are largely concerned to save natural rights theories from such attacks.

This analysis resolves two questions that traditionally plague natural rights theories. First is the matter of the inclusion of such rights into legal systems. Before they are included they clearly cannot be legal rights. At that stage they must be moral rights. Second is the question of who has the duty under discussion (correlative to the right if one thinks human rights are rights or the duty not to interfere if one interprets natural rights as protected freedoms). Human rights refer to duties of the State and its agents, as is especially clear in the analysis by Bernard Mayo, "What Are Human Rights?" Political Theory and the Rights of Man, ed. Raphael, 68-80 at 77.

²¹ This follows the analysis of E.F. Carritt, Ethical and Political Thinking (Oxford: Clarendon Press, 1947), Chapter VI.

²² It has been argued that, in addition to those claims explicitly protected by the U.S. Bill of Rights, "claims of conscience" per se should be recognized as excusing (at least some) non-compliance with law. See the dissenting opinion of Chief Justice Charles Evan Hughes in U.S. v. Mackintosh, 283 US 605 (1931) voicing an opinion subsequently embraced by the Supreme Court as a whole; and the decisions of the International Military Tribunal at Nuremberg. Given the definition of conscience as "some belief that ... comprises the organizing principle of his practical life, and has the paramountcy that a relation to a Supreme Being used to have or has for others" (U.S. v. Seeger, 380 US 163 (1963)), this amounts to an argument that individuals should (to some extent) be allowed to do things that are very important to them because they are so important to them.

PART IV

THE POLITICS OF ENVIRONMENTAL PROTECTION

CHAPTER 9: THE ECOLOGY ISSUE

The American environmental protection crusade of the late 1960's signals the political recognition of the lessons of the science of ecology. By definition, "ecology" is that branch of biology concerning "mutual relations between organisms and their environment." While the science itself is quite broad and deals with the multitudinous relationships between living organisms and their environments in general, the political focus is on ecological consequences of man-made changes in environments, both his own and those of other organisms.

For all the evangelical zeal it manifests, the ecology movement has interjected astonishingly few new themes into American politics. Rather, the political ecology issue has served an integrative function, swallowing up and supplementing several older issues. Pre-existing political issues with ecological overtones, notably conservation, public health and resource depletion, have become the core of the political issue of ecology. Ecological sciences yield useful facts for these on-going political debates, but "ecology" adds little more than new fuel and a new category under which very old and familiar debates proceed.¹

Forming a new ecology issue by integrating older issues means that four quite distinct arguments are advanced as ecological considerations. The first is an ecological analogue

to older conservationist arguments that Mother Nature's beauties ought not be marred. A second argument concerns public health and claims that environment by-products of technological "progress" endanger men's physical and mental health. A third issue, really an extension of the second, is that the magnitude of environmental damage is such that the survival of mankind is in doubt. A fourth argument, related to the third but stemming from a tradition all its own, is the concern that natural resources will soon be depleted.

It is important to analyze these arguments separately and in some detail. They are all "ecological issues" in the sense that the science of ecology has an obvious bearing on all of them. That, of course, does not guarantee that they can safely be lumped together into a single coherent issue package. Another science, nuclear physics, lends factual support to both a militarist and a pacifist, depending on one's evaluative predispositions. The detailed analysis of these four arguments that follows shows each to be a distinct argument, based on a distinctive value judgement and recommending a slightly different policy. Some of the arguments *imply* some of the others (eg., pollution must be unhealthy if human survival is to be jeopardized), but no one of them *implies* all the others. Just as it is not logically

necessary to combine all these arguments, neither is the combination patently illogical. The issues have some things in common but do not fit together perfectly. There is clearly a potential inconsistency between action implications of conservation and public health on the one hand and resource depletion on the other; the former is aimed at preventing the ugliness inherent in productive processes while the latter aims to conserve today only in order to produce (and pollute) tomorrow. The Alaska pipeline controversy might be seen as an example of the conflict between those fearful of resource depletion, who propose to pipe millions of gallons of petroleum to an increasingly energy-starved U.S., and conservationists who fear oil spills on precious tundra. Ecology, however, must not be blamed for introducing this schizophrenia which actually has long plagued the conservation issue itself.

In the end, the most important thing all of these arguments have in common is that they all complain of a coordination problem as regards the natural environment. This is more commonly expressed in terms of environmental pollution being an "unintended order." Decisions in favor of expanding outputs do not take into account many of the evils that necessarily accompany such expansion (pollution, resource depletion, etc.) because such evils are "externalities,"

costs the producer does not bear himself but rather passes along to others. While it is certainly true that in most cases there has been no societal decision in favor of a fouled environment and its concomitant advantages over a cleaner but otherwise less desirable world, that does not prove that the "unintended order" is also undesirable.

One cannot be certain that, had the question been put to a society, the environment would have necessarily been the winner. And environmental pollution cannot constitute a coordination problem of the sort discussed in Chapter 3 unless the unintended order is also an undesirable order.

At this point, differences between the arguments for environmental protection come to matter very much. If the decision to damage the environment really amounts to opting for suicide, then it is fairly plausible to suggest that no one would have chosen the unintended order. But if all that is at stake is a slightly uglier or marginally less healthy world, then it is much less clear that aesthetic or health considerations would have been so compelling. In the analysis of the four strands of the ecology issue that follows, then, special attention is accorded to questions of how clearly undesirable the unintended order really is.

9-1: Components of the ecology issue.

9-1-a: Amenity

Conservation is a relatively old issue in American politics. It can be dated, somewhat arbitrarily, to the administration of Theodore Roosevelt in the first decade of the twentieth century. The dominant strand of the conservationist argument has always been aesthetic, an appeal for appreciation and preservation of the natural wonders of North America. National Parks were created to protect the natural "spectaculars"--the Grand Canyon of the Colorado River, the Florida Everglades, the Yosemite Valley, Yellowstone's geysers--but the conservation issue also extends to much less dramatic cases of preserving the fisherman's favorite creek and the bird watcher's woodland. The last surge of pre-ecological interest in conservation was Ladybird Johnson's Beautification program aimed primarily against ugliness along the highways, mostly billboards and "auto graveyards." The example of the Beautification program dramatically emphasizes the aesthetic orientation of conservationists: all that a junkyard owner need do to make the First Lady happy was to erect a tall fence or row of trees screening the eyesore from the view of the motoring public.²

Studies in ecology are helpful supplements for the conservationist argument. By providing information on the impact of environmental changes on living organisms, the ecologist bolsters the conservationist's case with factual information on the kind and extent of damage that results from an altered natural environment. When protesting the construction of a deep water port which would destroy coastal wetlands, for example, the conservationist can point to ecological evidence that a large proportion of many kinds of marine life are spawned in wetlands such as developers propose to destroy.

The conservation argument advanced by politically-minded ecologists might better be described as an amenity argument. Among several other complaints with modern technological society, the ecologist ordinarily can be heard saying, "Technology begets ugliness, it makes life less pleasant." The extreme position is embodied in Barry Commoner's Fourth Law of Ecology: "Nature knows best." A more reasonable version of the amenity argument is to be found in the writings of René Dubos, whose disdain for the by-products of industrial society stops far short of repudiation of all human improvements on Mother Nature's handiwork. At least from the point of view of man, it seems quite undeniable that men have made some improvements on

nature (eg., by constructing shelters instead of relying on caves), and the amenity aspect of the ecology argument is on strongest footing when it does not amount to unrestrained enthusiasm for all things natural.³

Even phrased in the more cautious manner of Dubos, however, the amenity argument still begs crucial questions of value judgements. It presupposes that all citizens are substantially in agreement on fairly detailed standards of "pleasantness." Although there probably exists some fairly broad consensus on amenity criteria, it is doubtful that such consensus is either as unanimous as ecologists need it to be or as detailed as they hope it to be. Pink smoke belching from the chimneys of a dozen steel mills is no doubt an impressive sight; some men regard it as beautiful. The ecologist complains of the nerve-shattering noise of the city, but others regard the same noise as an exhilarating contribution to the "excitement" of city life. If one man's disamenity is another man's amenity (and to some extent, it surely is), then the ecologist's amenity argument for environmental protection is in danger of never getting off the ground.⁴

Such hope as there is for the amenity argument turns on the possibility that disagreements over standards of pleasantness are much less fundamental than they appear at first glance. It seems highly likely that most quasi-aesthetic accolades of

industrial ugliness are really more general praise of the virtues of industrialization on balance. Many who dislike pollution nonetheless approve of industrialization on balance on account of the counterbalancing benefits it offers.

In the course of defending industrialization as a good thing on balance some defenders go so far as to deny that it has any disadvantages, when outside the context of that argument the defenders would be prepared to admit the undesirability of pollution.

Most city fathers would be disgusted by the prospect of smoke from a proposed steel mill but, on balance, they are often willing to accept it as the price the community must pay for economic prosperity. The city father and the ecologist both agree that smoke is undesirable, and they only disagree as to how unpleasant it is and what sacrifices are in order to prevent it. The city father perceives a necessary link between pollution and prosperity and, unlike the ecologist, he prefers a world with both to a world with neither. To be sure, this choice reflects a fundamentally irreconcilable disagreement between the two men over amenity criteria, and there is no reason to suppose that either will be able to convince the other of the superiority of his aesthetic values. The ecologist, however, may prevail on another level by demonstrating to the city father that pollution and prosperity are not necessarily linked. If they are separable, of course,

the city father would prefer both clean air and economic prosperity. It is the task of the ecologist to demonstrate that smoke is an unnecessary by-product of a steel mill which may be prevented by, for example, precipitators in smokestacks. By requiring the mill to install the necessary abatement equipment, the city father gains the best of both worlds and the ecologist's amenity argument carries the day.⁵

In order to drive a wedge between environmental disamenities and other (ordinarily economic) amenities the ecologist must depend upon the possibility of a technological modification of the production process. The steel mill can bring prosperity without smoke only because there exists a piece of hardware, a precipitator, which removes most particulate matter from emissions. Scientists are among the first to emphasize that there often are no technological solutions, especially to pollution problems. Thus, a community committed to the goal of industrialization ought to realize that technology will not save it from all (or even most) environmental repercussions of that decision.⁶

The point of seeking technological innovations is to separate the issue of environmental protection from other issues. Other things being equal, most people probably prefer less to more pollution, and it is the technological solution that makes other things equal. To remove pollution is to

that makes other things equal. It removes the necessity of weighing the evils of pollution against other advantages, and by removing the necessity for choice a technological solution allows nearly universal disdain for pollution to prevail in the argument. This strategy, however, is not perfect. Even it requires the disadvantages of pollution be weighed against other social evils. This balancing is necessary because antipollution technology is not without its price, both of installation and for research and development. How heavily a society invests in this technology, of course, must necessarily be a reflection of the social weighting of the ecological disamenity as against other social evils which are also unpleasant.⁷ The possibility of a technological solution furthers the ecologist's amenity argument, but it does not allow him to avoid entirely the problem of differing amenity criteria.

This is not to deny the strength or respectability of the amenity argument for environmental protection. Most citizens probably do define environmental quality approximately the same way, and most probably value it fairly highly. Most would probably like to see a sizeable sum invested in improving the environment. All told, the amenity argument is one of the stronger ones available to the ecologist, but it does have less than universal appeal. The shift away from the conservationist's amenity focus toward other arguments can be interpreted as an attempt to broaden

(and ultimately to universalize) the appeal of environmental protection.

9-1-b: Health Hazards

The U.S. public health movement has virtually come full circle in its approach to environmental influences on health. Before the mid-nineteenth century when bacteriological causes of disease became identifiable and controllable, the only available method for promoting public health was to sanitize the environment generally. Although the linkages were obscure, it was clear enough that filth and odors were somehow connected with disease. So until the linkages were discovered public health officials attacked one by attacking the other, disposing of dead horses in the streets, closing open sewers and the like. As microbiology and immunology became more sophisticated, more direct causes of disease could be identified and treated and public health officials were not forced to cast their nets so widely. A result was a very narrow focus on medically-identifiable agents of disease on the part of public health officials, who left the disagreeable but not demonstrably unhealthy aspects of urban life to others to correct.⁸

Medical science is coming to regard the earlier, broader focus as the more appropriate. Many things formerly dismissed as disagreeable but not dangerous are not recognized to be both disagreeable and medically hazardous. Environmental

health points to numerous cases. Breathing air polluted with particulate matter and SO_2 probably causes a variety of pulmonary disorders and many cause certain types of cancer. It may be distinctly dangerous to drink water even when bacteria and organic chemicals are removed because of concentrations of certain inorganic chemicals added by upstream factories. Loud noises most certainly impair hearing, and over a period of time softer sounds may have the same effect. In more subtle ways, pollution can be even more dangerous to human health. Mercury dumped into the sea finds its way into the tissues of fish, and, when the fish are caught and eaten, of men; DDT and other pesticides wash off crops and into the oceans with the same result even when their impact is not more direct. These poisons build up in a man's tissues and may take years to produce noticeable effects, making them all the more dangerous. The medical effects of pollution may be even more pronounced as regards mental health. Crowding, ugliness and noise especially have deleterious impacts on a man's psyche. These may, in turn, be reflected in physical illnesses such as ulcers and "social diseases" such as increased crime and vandalism.⁹

In urging men to protect the environment because their health depends upon it, ecologists attempt to appeal to a wider audience than they could win with the amenity argument alone. Presumably, more people would object more violently

to an unhealthy practice than to one which is only unsightly. Almost certainly, people would prefer good health to ill health, other things being equal. The ecologist therefore advances this argument alongside the amenity argument and hopes they are compatible. To demonstrate compatibility, he must argue that environments satisfying health criteria also satisfy amenity criteria and vica versa, which seems to be wildly implausible. Certainly every unpleasant practice is not also unhealthy, nor even is each unhealthy practice necessarily unpleasant, but unless they can prove this identity ecologists are making partially different arguments. The fact remains that most of the ugliest pollution can be shown to be unhealthy, so such differences as there are between the two arguments are probably fairly trivial.

Once again, all that can be said with near certainty is that men, given the choice between a healthy and unhealthy environment , will opt for health if all else is the same. This can be assured only if there exists some technological solution to the pollution problem at hand. But such hardware is certain to involve some costs, and it is by no means certain that all men (or even any man) would be willing to pay any amount for good health. The problem of cost becomes even more ponderous when questions of alternative expenditure on other goods are introduced.

The public health argument is even more vulnerable in a second way. It will not be decisive because "other things"

are not the same, and more than health considerations is involved in choices between alternative environments. In many cases there is no technological solution to pollution problems, and there is no way to avoid a show-down between a healthy environment and all the counterbalancing advantages of an unhealthy environment. When forced to make such a choice, it is by no means certain that all men would always choose a healthy but otherwise less desirable environment. Coal mining is an unquestionably dangerous occupation, the threat of accidents and the certainty of black lung disease combining to assure a miner an untimely demise. Still, some West Virginia miners, aware of these facts, continue mining instead of returning to their family farms in the hills. Health is not everything, and in certain circumstances other goods will be chosen over health.

In basing arguments for environmental protection on appeals to enhance health, it is less likely that ecologists have chosen unpopular value judgements than it is with their amenity arguments. They still are on somewhat uncertain ground, however. It is highly probable that some men under some circumstances will be unmoved by their appeal to protect the environment in order to protect human health. The two other arguments, survival and resource depletion, constitute attempts to widen the appeal of the ecology issue by basing the argument on values which are nearly universally shared. But, as will be seen, these more appealing arguments rest

on questionable assertions of ecological fact.

9-1-c: Survival

The survival argument for environmental protection has no independent political tradition but instead grows out of the public health argument. This argument suggests that abuse of the environment is so tremendously unhealthy that the continued existence of human life on the earth is in danger. A popular analogy is "Spaceship Earth." The spaceman, an exaggerated Everyman, depends on his environment for provision of certain basic natural requirements to sustain human life, among them the appropriate temperature, adequate oxygen, food, water, space, etc. Like the life support system of the spacecraft, the earth's ecology is delicate and all aspects are interrelated. A change in one aspect of the environment will be reflected throughout the system, just as a change in one detail of the spacecraft's life support system has repercussions throughout the rest of the system. A distressing difference between the spaceship and the planet is that the spaceman (or Mission Control, at any rate) knows what he is doing when modifying his artificial environment, whereas the science of ecology is not sufficiently advanced to predict with any confidence the results of man-made environmental modifications. Abuse of the natural environment, then, amounts to a game of Russian roulette.¹⁰

The nearly universal appeal of the survival argument is readily apparent. To the extent that abuse of the natural environment really does endanger the species, it is certainly an undesirable as well as an unintended outcome. Only the most radically present-oriented person would knowingly opt for such a suicidal course. Nothing short of astronomical short-term gains could outweigh so substantial a long-term loss, and it is clear that environmental abuse is simply not that profitable. If short-sighted waste of vital natural blessings really does threaten to destroy the ecological basis of human life, then this is certainly a most compelling reason to protect the environment.

Ecologists try to make the most of the argument that abuse of the environment threatens to make man an endangered species. The popularity of the theme and its centrality to recent ecological arguments is best revealed in the titles of "eco-scare" tracts. Gordon Rattray Taylor offers The Doomsday Book. Paul Ehrlich and Richard Harriman tell us How to be a Survivor: A Plan to Save Spaceship Earth. Barbara Ward and René Dubos are slightly more subtle in discussing Only One Earth, The Care and Maintenance of a Small Planet. Robert Dasmann's Planet in Peril? Man and the Biosphere Today is nearly as authoritative as Ward and Dubos', growing as it does out of the 1968 UNESCO Biosphere Conference.

As the ecological focus shifts to more universally appealing value judgements such as aversion to suicide, however,

the ecologists' arguments become factually less compelling. The ecologists experience much difficulty in connecting cataclysmic rhetoric to ecological realities, as is betrayed by the variety of ways in which they attempt to make the connection. Some contentions are more plausible than others and there is undoubtedly some basis for concern over the ecological base for man's continuing existence, but it is by no means certain that disaster is imminent. In short, such increased appeal as is gained by basing the argument on more universally shared values is more than offset by the dubious validity of the factual claims involved. On balance, then, survival is no stronger an argument than health or amenity. All are relatively strong arguments, but none is compelling.

Many of the "survival" arguments for environmental protection involve little more than an assertion of the propriety of the Spaceship Earth analogy. Clearly, some things man does to the environment make it a less healthy place to live. It is equally clear that he does those things on a grand and expanding scale. The late, lamented "death" of Lake Erie and the occasional catching afire of the Cuyahoga River, full of industrial wastes from Cleveland, are frequently offered as evidence that man is "fouling his own nest" at an incredible rate. Given such a widespread pattern of extreme pollution, the argument runs, it cannot be long before mankind follows the lead of the fish of Lake Erie.

However suggestive the "fouling his nest" formulation, nothing can be proved without putting the survival argument into a more respectable scientific form. The biosphere is characterized by self-renewing, self-cleansing mechanisms. Within limits, particulate matter thrown up into the air as factory smoke will naturally descend again in rain, and the atmosphere remains unaltered. (So might the ground on which it falls, depending on the chemical composition of the soot.) Likewise, within some limits a river or, for that matter, an ocean will naturally cleanse itself of pollutants. There are, however, quantitative limits to the biosphere's capacity for self-renewal. Only a certain, fixed amount of pollutants will naturally be removed from the environment. Anything in excess of these limits will stay in the atmosphere, river or ocean and cannot be removed naturally. The survival argument can be translated as a suggestion that human wastes now breach those limits of the environment for self-renewal and that, without human intervention, harmful residuals are bound to accumulate in the ecosphere.¹¹

Two features of human communities tend to hasten the breach of these natural limits. Increasing reliance on modern technology adds to the environment's difficulty in cleaning itself by substituting artificial substances for natural ones. These synthesized materials are often not "bio-degradable," i.e., nature cannot decompose the substance

into its basic constituents. For example, glass is for all practical purposes immune to natural recycling processes; a bottle left by the roadside will remain long after a paper container has become humus. Many more dangerous combinations (such as DDT) will likewise remain substantially unaltered in the environment.¹² The second feature is the pressure of increasing populations. Quite without the aid of technological contributions, exponential growth of population would press to the limits the earth's capacity for self-renewal. Modern technology hurries the inevitable by making it more difficult for the natural environment to manage each individual's wastes. Thus, technology and population growth work hand-in-glove to hasten the breach of the limits to the earth's capacity to cleanse itself.¹³

A more ominous environmental threat to human existence is inadvertent climate modification. A change in the world's average temperature by a very few degrees in either direction would be catastrophic. If it becomes much colder, the polar ice caps would grow, initiating a new ice age; if it becomes warmer, the ice caps would melt, swelling the oceans and inundating many population centers, and equatorial regions would become unbearably warm. Through industrial pollution, man may be accidentally upsetting this delicate balance. Industry worldwide pours carbon dioxide into the air, and defoliation destroys millions of acres of plants which would have converted CO₂ into oxygen. The combined result of these

two processes is an inevitable build-up of carbon dioxide in the earth's atmosphere. Under laboratory simulations, increasing the concentration of carbon dioxide in an artificial atmosphere seems to have a "greenhouse effect," warming the soil below. Industry also disperses much particulate matter into the air in the form of smoke, and this, too, is likely to have some effect on climate. The precise effect of air-borne particles, however, is less clear. There is some limited evidence to suggest that it may reinforce this "greenhouse effect" of increased CO₂ by reflecting the earth's own heat back to the earth; at least this is what seems to have happened when large volcanic eruptions threw tons of volcanic ash into the atmosphere. More likely, particulate pollution evenly distributed throughout earth's atmosphere would probably have the opposite effect, i.e., shielding the earth from the sun's rays and thus countering the "greenhouse effect" of carbon dioxide pollution.

The scientific moral to the climate modification story is that one pollutant may correct for another, and a simple-minded appeal to reduce pollutants may be foolhardy. We need desperately to know how all aspects of ecology relate to all other aspects, including how pollutants inter-relate. This simply illustrates the economic "theory of the second best": if we cannot have the perfect world (in this case, one with no pollutants at all) then the "second-best" will

probably depart from all the optimal conditions (have many counterbalancing pollutants).¹⁵

While the survival argument is typically employed to urge a ban on pollution, what it really supports is research-and-development in the ecological sciences. Since it is unlikely that we will ever enjoy a perfect (i.e., pollution-free) environment, it is important to scientifically investigate what would be the second best; we may not confidently assume the less pollutants the better. And even if we hold out the hope for a perfect environment, it is important to understand the ecology so we do not destroy ourselves in the process of striving to achieve that goal.¹⁶

This is to suggest that Charles Lindbloom's suggestion for policy-making under uncertainty is entirely inapplicable to environmental policy. Ordinarily, the "science of muddling through" obviates the need for extensive research. The idea is that policy-makers make incremental changes, and if they approve of the results of one incremental change they should continue on that course.¹⁷ Incrementalism is especially inappropriate to environmental policy, however, because we have no idea of how long to wait before judging the consequences of one incremental change. Without understanding the workings of the ecology, we have no idea how long a policy change must percolate through natural processes before being reflected in some concrete change in the environment. Indeed, had we that understanding there would be no need for "muddling through." The argument that human survival is in danger as a result of

ecological thoughtlessness, then, argues strongly for increased research.

The ecologist's survival argument looks to the future. Homo sapiens is perhaps an endangered species, but it is not yet an extinct one. All the ecologist can say is that the threshold will be crossed at some future date if present practices continue. This is at once a prediction and an appeal; and the prediction will not come true if the appeal succeeds in persuading men to alter present practices. Even without the appeal, though, it is highly unlikely that present practices will continue unaltered, so the prediction would not have come true anyway. A dangerous concentration of CO₂ might well accumulate in the atmosphere if men continued burning fossil fuels at present rates until year 2000, but it is more likely that the "energy crisis" will force replacement of coal and oil with nuclear, solar or geothermal energy before then. Predictions very far into the future are unreliable because they assume present practices will continue unrealistically long into the future.¹⁸

The time element is crucial to the ecologist's argument. He must argue that the time is right for action. If it is too late to rectify our past neglect of the environment and our collective suicide cannot be prevented, then there is little reason to alter our ways. Likewise, if the eco-catastrophe is a millenium away, now is hardly the time to begin worrying about it. The sun will, in three or four billion

years, burn itself out, but no one seems overly concerned. The ecologist's survival argument has force only if the time is right, if it is neither too late nor too early for concern, and this is something the ecologist simply has not proven. Since he has only assertions to support this crucial element of his case, the ecologist's survival argument can be accepted only as a rationale for research and development, not as a call to ecological action.

Finally, the linkages between the survival argument and other arguments for environmental protection are somewhat deceptive. The survival argument is heavily dependent upon the public health argument. Unless pollution is unhealthy it cannot threaten human survival, except, perhaps, by altering climate. This logical connection between the two arguments, however, is not reflected in similarity of action implications. The environment can be made perfectly fit for the continuing existence of the species without being made fit for the existence of each human specimen, much less his health or happiness. There is a logical connection but little practical relation between the survival and public health arguments. Conversely, there is no logic linking amenity and survival, but there may be subtle but important practical connections between them. Certainly the environment can be made very ugly and unpleasant before it becomes unfit for human survival, so protecting the ecological base of human life does not logically imply an attractive environ-

ment. But since ecologists are terribly uncertain of the effects of environmental modifications and cannot predict with confidence what will lead to mankind's downfall, the most reliable way of protecting the ecological basis of human life might be to protect the ecological basis of all (or at least a very wide range of) life forms. To be sure, men can exist in an environment unsuited to birds and fish, so an environment pleasing to the conservationist is not a necessary condition of human existence; but equally certain is the ecological fact that an environment in which fish and birds and monkeys can exist will also support human life, so the conservationists' ideal is a sufficient condition of survival of humanity. Given our limited ecological knowledge we cannot safely manipulate the environment to suit our needs, and it might be best to err on the side of caution and take the death of any animal as a portent of human disaster. Similarly, nineteenth century miners carried caged canaries into the pits with them. Canaries are more sensitive than men to lethal but odorless mine gas (methane), so when the canaries died the miners knew it was time for them to flee. Modern man might be well advised to be equally attentive to the well-being of nature's creatures. If the survival argument for environmental protection is operationalized in this way, its practical implications are identical to those of the conservationist's amenity argument.¹⁹

9-1-d: Resource Depletion

In spite of thematic similarities, there are reasons to consider separately survival and resource depletion arguments. The first and less compelling reason is that the resource depletion argument has a tradition all its own in the history of political discourse. The ecological argument is a direct descendant of Thomas Malthus' 1798 Essay on the Principle of Population. More recently, the Cold War renewed American fears that domestic reserves of natural resources may be depleted, leaving the U.S. at a strategic disadvantage vis à vis the Soviet Bloc. In response to such fears, the U.S. began amassing "strategic stockpiles" of basic materials of military importance. These strategic fears, however, were short-term, as evidenced by the report of the Paley Commission confidently reassuring President Truman that resources would last ~~thru~~ through the year 2000.²⁰ More than political traditions, the logic of the resource depletion argument sets it off from other ecology arguments. In its basic form, the logic of the argument is unchanged from the days of Malthus and suggests that demands on resources grow exponentially while supplies increase only linearly.

At an intuitive level, a variant of the Spaceship Earth model informs the resource depletion argument. A spacecraft is a closed system containing a fixed quantity of materials. Primary interest, of course, is in those materials necessary

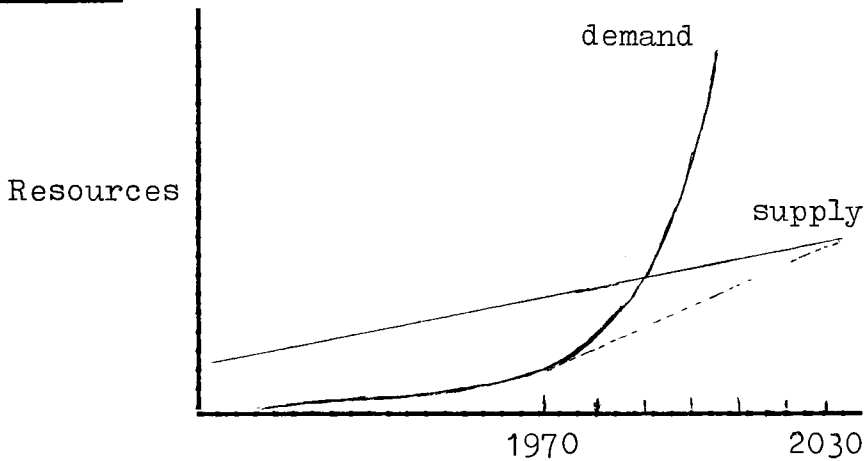
for human life (oxygen, water, food, etc.) but the supply of all other materials is likewise limited. Viewing the earth from the vicinity of the moon has helped underscore the point that the earth is a similarly closed system. From the "heavenly" perspective it is obvious that, however vast the earth's resources, they are finite. (Actually, quantities of natural resources are not quite fixed since the earth is continually in the process of replenishing the supplies; such subtleties do not much matter, however, given the incredible slowness of natural processes of manufacture as compared to the rapidity of human use .) The point of the Spaceship Earth analogy is that, just as the spaceman will at some point exhaust his limited resources, so too will mankind exhaust the earth's limited natural resources.²¹

This intuitive approach is far from a compelling argument and comes up short precisely where the analogous survival argument becomes suspect. Certainly there are limits to the earth's natural capacities, but there is no reason to make a political issue of them until we are within striking distance of exhausting them. For the resource depletion argument to be persuasive, there must be some evidence that it is neither too late nor ridiculously early for concern. The Spaceship Earth analogy is convincing in demonstrating that the earth offers limited resources for human use , but it simply cannot complete the argument by demonstrating that

man is near exhausting them.

Ecologists supplement the argument from analogy by resurrecting familiar Malthusian reasoning. The basic notion, that demand for resources increases geometrically while supply can only increase linearly, can be used to argue both for the inevitability and the imminence of disaster.²² In Figure 9-1, the inevitability of resource exhaustion is obvious; an exponential curve (demand) will

Figure 9-1



inevitably intersect a line (supply) at some point and beyond that point demand exceeds supply. Ecologists have computerized available evidence of the shape and slope of these curves, and as a result they are also able to use the exponential growth analysis to suggest that exhaustion of resources is imminent. How soon resources will be depleted (i.e., the demand curve will cross the supply line) depends on the calibration of the axes and where we are presently on the curves. Ecologists have plotted data point from

available (mostly rather recent) years, and extending the curves they conclude that resources will quite soon be depleted.

The logic of exponential growth also provides a rationale for worrying about depletion of resources which presently seem abundant. If demand for them does increase exponentially, then abundant resources may disappear very quickly. In Figure 9-1, the intuitive way of predicting the future (linear extrapolation of present trends, as represented by the broken line), suggests resources will last until 2030, but if demand increases exponentially then resources will become insufficient by 1990. A French children's puzzle demonstrates the same point more forcefully. Suppose a lovely water lily begins growing on your pond, and you want to let it grow as large as possible without actually covering the entire pond and killing the fish below. If the lily doubles in size every day, how large may you let it grow before cutting it? The answer, of course, is that you must kill it the day it covers only half the pond, for the next day it would cover the entire pond. The frightening extension of the analogy to ecological issues suggests that natural resources must be conserved when they are apparently abundant if they are to be conserved at all.

Both for applying and evaluating the "resource depletion" argument it is helpful to distinguish between two broad categories of resources in short supply. The first ecological

worry is that mankind will run out of resources necessary to sustain human life, such as water and food (or, more precisely, requisite resources for food production).²³ In this regard, the resource depletion argument supplements the survival argument--in addition to poisoning himself, man is also starving himself. The policy implication of this tack of the argument is popularly known as "zero population growth." While it is certainly true that some men eat more than necessary to sustain life, the logic of exponential increases in demands (eg., for food) exposes the folly of a Green Revolution, even when it is coupled with belt-tightening efforts. Ultimately, the only way to diminish demand for food is to decrease the numbers of people demanding it. The same is true of all other resources required to sustain human life. The second class of diminishing resources is really a residual category including all resources not strictly necessary for life but somehow linked with present life styles. Included here are metals such as chromium and copper and fossil fuels. Demand for these resources also seems to be increasing exponentially, partially because of the exponential increase in population and partially because each man demands a continual improvement in his standard of living. Thus, if zero population growth is achieved much but not all of the pressure on these resources will be removed. Even if population growth is halted, the demand for continual improvements in the standard of living still en-

dangers resource stocks. The ecologists' prescription here parallels that of the Stoics in suggesting if you cannot have what you want then want what you have. Less cryptically, ecologists urge a change in the direction of an "ecologically more responsible life style." Acting Director of the U.S. Environmental Protection Agency, Robert Fri says of his Agency's standards for automobile emissions, "We are basically attacking the problem by asking people to change their habits, their longstanding, intimate relation with the private automobile."²⁴

The value judgements underlying the ecologists' policy prescriptions seem most uncontentious. They urge conservation of resources necessary for human existence, which very few people would care to see endangered. Ecologists further urge men to reconcile themselves to the inevitable, to adopt life styles that the planet can support instead of persisting in practices the earth will simply not support for much longer. If present life styles are indeed non-options, then it is both the reasonable and the psychologically healthy thing to do to accept one's fate by modifying life styles. In short, the value judgements implicit in the resource depletion argument seem unassailable.

The factual claims of the resource depletion argument are not so incontrovertible. Clearly, the kingpin of the argument is the claim that demands for resources increase exponentially. Only in this way can the ecologist plausibly argue that the time is right for action. Unless demand in-

creases geometrically resource depletion need not concern us for decades, if ever. (Even if demand does not grow exponentially, it might be wise to invest in technological research aimed at finding substitutes for some resources that will become scarce or at increasing the efficiency of their usage; this is a far cry from ecologist action-plans, however.) Resource depletion will be as urgent a problem as ecologists wish it to be considered only if demands for resources increase exponentially. Given the complexity of interrelated forces shaping global futures, it is far from certain past demands increased exponentially, much less that future demands will do so.²⁵

The most sophisticated and by far the most influential of modern neo-Malthusian arguments are those based on computer projections of world futures. Dennis Meadows et al., The Limits to Growth, is the authoritative statement of results of the MIT-Club of Rome simulation based on Jay Forrester's systems dynamics technique. (Forrester himself reports preliminary results of such an application in World Dynamics.) Meadows, like Forrester, sees no fundamental difference between computer models and the mental models men ordinarily use in thinking about the future. The only advantage of computer modeling is that it allows the analyst to trace complex and otherwise elusive interactions between variables. The flowchart for Meadows' computer program, for example, contains five basic elements (population, resources,

pollution, capital, and agriculture) and over one hundred elements detailing interactions between them.

Projecting the world's future is no doubt possible, provided one is armed with a full listing of all relevant factors and accurate information about the ways in which they interact. The Meadows-Forrester models are deficient on both grounds. Meadows' technique for specifying interaction functions is suspect because it is based on sketchy and comparatively recent (post-1900) data. Forrester's is nothing short of incredible. He is unashamed to admit that his functions are based purely on his own intuitions without benefit of any empirical data whatsoever. Both offer the same defense for their rather incautious approach, that their conclusions are insensitive to their assumptions about interaction functions. By way of proof, a single function is varied dramatically and the system collapses all the same. For example, Meadows predicts that known reserves of chromium will last ninety-five years; if we discover new deposits and increase present reserves four-fold, they will last only one hundred fifty-four years. As the analysis of the Sussex University team shows, however, this insensitivity of conclusions to assumptions reflects the simple fact that two things are working quite independently to bring about the predicted disaster in the models.²⁶ If optimistic assumptions are made about population growth, for example, the pessimistic assumptions of the capital accumulation submodel

will still lead the model as a whole to predict disaster by the end of the century, and vice versa. Meadows and Forrester can show their models to be insensitive to assumptions only by varying assumptions one at a time. If optimistic assumptions are made about both population and capital simultaneously, we might yet make it through the century. The Meadows-Forrester argument that we reach the same conclusions no matter what our assumptions is simply unpersuasive. Therefore, the weak data base of their interaction functions might well be a serious shortcoming.

A second and much more damaging problem of Doomsday models is their neglect of relevant factors, primarily technological advances and changes in human values. The Limits to Growth supposes it is impossible to predict technological advances, and for that very reason urges us not to count on them as technological optimists would suggest. Anyway, Meadows continues, even if a new technology were devised to forestall collapse in one sector, the model would still collapse in another--unless, of course, there is technological advance there also, a possibility which Meadows conveniently ignores. It is not very safe to ignore the possibility of technical progress when looking one hundred thirty years into the future--as the Sussex team points out, "a forecast made in 1870 would have omitted the principal source of energy in 1970 (oil) and the fastest growing new source (nuclear power)."²⁷ If the Limits to Growth model

were amended to consider continuous incremental improvements in various technologies then collapse does not result, which even the MIT team admits in the current draft of the Technical Report initially intended to support The Limits to Growth. A second neglected factor is the possibility of changes in human values. Men may, either in response to threats of environmental disaster or for other reasons altogether, alter their desires and the ways they go about satisfying them. If they do, the Limits to Growth projections will certainly fail, but this too is a possibility which the Meadows group ignores. There can be no better conclusion than Wilfred Beckerman's biting note to his Inaugural Lecture:

A fifth-century B.C. Club of Rome (?Athens) team would certainly have predicted the imminent end for the world by extrapolating the already growing shortage of timber resources and pointing to the over-population of Athens. ... They would presumably have concluded that Mankind must abandon its pursuit of material objects and give up hope of providing everybody with a timber house, a bronze statue of Poseidon in the back garden, and a white-ground Lethykos on his mantelpiece. ²⁸

Ecologists cannot demonstrate beyond doubt that resources are certain to be exhausted in the relatively near future, but neither can their detractors demonstrate conclusively that they will not. Resource depletion may be far from a certainty, but in any case it is a possibility. If the possibility is thought to be at all probable, then societies are likely to choose to err on the side of caution and follow the ecologists' suggestions for promoting "ecologically

responsible" life styles. An ecologist, then, needs establish nothing more than an uncomfortable probability of disaster to induce the political action he desires. The MIT team might embrace this more modest goal. At the very least, the ecological "world dynamics" model justifies increased investments in research. By emphasizing the complex and interconnected earth processes, the model underscores the danger that ecologists with good intentions but insufficient information will recommend an ecologically disastrous course.

Finally, the resource depletion argument is relatively compatible with the other components of the ecology issue. The connections between it and the survival argument have been noted, and, while it does not entail the public health position, neither does it contradict it. Such problems as there are in including resource depletion as an aspect of the ecology issue are likely to arise from its incompatibility with the amenity-conservationist argument. The conservationist wants to conserve nature for its own sake, whereas the developer concerned with resource depletion wants to conserve only to use. There are bound to be some instances of conflict between these two positions, the latest being the infamous Alaska pipeline. On most matters, however, the conservationist and the developer will agree.²⁹ Lumbering companies have engaged in reforestation projects for many years; from their standpoint, it is good business and

ensures future timber, and in the meanwhile conservationists can enjoy the forests. As regards industrial pollution, efforts to conserve resources will inevitably diminish the output of ugly pollutants. The output of pollutants, after all, is symptomatic of incomplete utilization of resources. When the auto emits obnoxious fumes and particles, it does so because of incomplete combustion. The effort to conserve resources through more effective use will often also reduce pollution.

The general conclusion of Section 9-1 is that those ecological appeals based on the most universally acceptable value judgements are the weaker ones factually. There is no denying the factual premises of the amenity or public health arguments, although there is some room for questioning the underlying values; and there is little controversy over values implicit in the survival or resource depletion arguments, but the facts are not so certain. All ecology arguments seem to be somewhat flawed, and none clinches the case. On balance, the public health and resource depletion arguments seem just as strong as survival and resource depletion.

9-2: Political Issues

It makes sense to combine these four arguments into a single package "ecology issue." They all present the same theoretical issue, the undesirability of the "unintended

order," which will be considered at length in Chapter 10. More practically, these arguments should be considered together because their proponents have formed a quite unified coalition for political action. Typically, the ecologist will be seen sliding from one argument to another quite freely. The coalition is fairly cohesive, and what one group sees as an ecological issue most others will also see as an ecological issue most of the time.

For present purposes, the best way to describe the ecology coalition is to examine political issues upon which the members of the coalition agree.³⁰ Foremost among these political issues, of course, is abatement of air and water pollution. There is some room for disagreement about what is to count as a pollutant since some things that are unsightly may not be unhealthy and conversely, but usually standards of aesthetics and health concur on what is a pollutant. In addition to the older categories of air and water pollution, new categories of noise pollution ("acoustical assault," as Nader calls it) and thermal pollution (localized temperature changes such as heat added to a river especially by water used to cool nuclear reactors) have been added.

Ecologists are very attached to the cause of zero population growth. Many ecological problems would be diminished or even eliminated if couples would limit family sizes and have only enough children to replace themselves. (Since some couples have no children or only one, this means

each family may have 2.1 children; hence the name "The 2.1 Club.")³¹ People pollute in proportion to their numbers, so reducing population size (or at least holding it constant) would reduce pollution (or at least keep it from increasing). More far-sighted ecologists indict economic growth along with population growth since uncontrolled industrial expansion with a constant number of people will, in the end, produce the same effects as an unlimited growth in population.

The rhetoric of the ecology movement roundly condemns technology. The blanket indictment of technology is probably an overstatement, and few would deny that some technological innovations are desirable. An especially undesirable by-product of technology is often the manufacture of synthetic substances which are not biodegradable. Another unhealthy influence of technology is its tendency to encourage industrial expansion without consideration of ecological consequences. "If pollution results," people all too often rationalize, "then scientists will find some way to control it." Ordinarily, ecologists have no objection to employing existing technological solutions to pollution problems. They do, however, object violently to the tendency to pollute carelessly and count on future technological innovations to repair the damage. There is simply no assurance such a technological solution will be found.

The problem of non-biodegradable products is part of a

larger ecological problem of the disposal of solid wastes. Ecologists urge a policy of maximum feasible recycling, involving materials from paper to pop bottles. For some years, churches and charities have sponsored occasional "newspaper drives" as fund-raising devices, but only recently have Americans begun to routinely take old newspapers to central collections points for recycling. Many anti-pollution tomes announce that they are printed on recycled paper, and 1972 Democratic National Committee appeals for contributors were likewise printed on recycled paper. The state of Oregon recently banned all no deposit-no return bottles and pop-top cans, so citizens now must pay deposits on all beverage containers; hopefully, this will induce consumers to return the bottles for reuse.³² Recycling glass, tin, and aluminum containers (melting them down and re-shaping them, as opposed to merely refilling them) is not very profitable, and is consequently not often done as a matter of course in the commercial world. The ecologist's program includes attempts to make such recycling legally required even if it is not exceedingly profitable.

NOTES

¹ The most complete and reasoned of the "eco-scare" tracts is Barbara Ward and René Dubos, Only One Earth, The Care and Maintenance of a Small Planet (Harmondsworth: Penguin, 1972), the report on the state of the global environment prepared in connection with the 1972 U.N. Conference on Human Environment. Scientific sourcebooks include Carroll L. Wilson, et al., Man's Impact on the Global Environment,

Report of the Study of Critical Environmental Problems Sponsored by the Massachusetts Institute of Technology (Cambridge: MIT, 1970), Paul R. and Anne H. Ehrlich, Population, Resources, Environment: Issues in Human Ecology, 2nd edition (San Francisco: W.H. Freeman and Co., 1971), and Allen V. Kneese, "Background for the Economic Analysis of Environmental Pollution," Swedish Journal of Economics, 73 (1971), 1-24. Lynton Keith Caldwell, Environment, A Challenge to Modern Society (New York: Natural History Press, 1970) looks at the issue from a political point of view.

² On the history of conservation, see Caldwell; Frank E. Smith, The Politics of Conservation, (New York: Pantheon Books, 1966); Orvis C. Herfindahl, "What is Conservation?" Three Studies in Mineral Economics (Washington: Resources for the Future, 1961), 1-12; and George R. Hall, "Conservation as a Public Policy Goal," Yale Review, 51 (1962), 400-13. For amenity-based ecological appeals, see: Stewart L. Udall, The Quiet Crisis (New York: Holt, Rinehart and Winston, 1963); Frank Fraser Darling, Wilderness and Plenty (Boston: Houghton Mifflin, 1970), the 1969 Reith Lectures; Max Nicholson, The Environmental Revolution (Harmondsworth: Penguin, 1972).

³ Commoner makes a blanket indictment of technology in The Closing Circle (New York: Knopf, 1971). See the reply of René Dubos, "Humanizing the Earth," Science, 179 (23 February 1973), 769-72.

⁴ In his introduction to the British Edition of The Environmental Handbook, ed. John Barr (London: Ballantine, 1971), Kenneth Allsop writes, "Implicit in most ecological arguments is the assumption that common to most people is an attachment to and longing for the idealized countryside of Constable and Cobbett. That may be shaky ground." (xv.)

⁵ As Wilfred Beckerman argues, how much economic growth is possible per unit of pollution depends on our technology. Advances in technology can be made that allow more growth at the same level of pollution. ("Environmental Policy Issues: Real and Fictitious," Problems of Environmental Economics [Paris: OECD, 1972], 19-38). If we can sensibly make any statements at all about aggregate pollution, it certainly must be true that London of 1973 is much cleaner than London circa 1873, and this in spite of increased industrial output. Technological advances, both in manufacturing processes and home-heating techniques, allowed industrial expansion and at the same time an actual decrease in pollution.

⁶ The theme of Garrett Hardin's classic article, "The Tragedy of the Commons," Science, 162 (1968), 1243-8 is that there are no technological solutions to the environment problem. The

- 12 Technological advances might make biodegradable things which were previously not. For example, plastic was not biodegradable until the recent discovery of an additive which, if included during the manufacturing process, makes it susceptible to attack by enzymes commonly found in topsoil. See Time, 6 August 1973, p. 38.
- 13 Barry Commoner is especially worried about technology (see his The Closing Circle) while Paul Ehrlich is especially concerned with population growth (see his The Population Bomb, 2nd edition [New York: Ballantine, 1971]). The two forces are mutually reinforcing, and the personal antagonism between Ehrlich and Commoner ought not be mistaken for an academic dispute.
- 14 See Ward and Dubos, Only One Earth; and Wilson, et al., Man's Impact on the Global Environment, 9-20, 39-112.
- 15 R.G. Lipsey and R.K. Lancaster, "The General Theory of Second Best," Review of Economic Studies, 24 (1956), 11-33.
- 16 Wilson, et al., Man's Impact on the Global Environment details the research necessary for substantiating the survival argument. At the very least, a global monitoring system of some sophistication is required.
- 17 "The Science of 'Muddling Through,'" Public Administration Review, 19 (1959), 79-88; and The Intelligence of Democracy.
- 18 See Miguel A. Ozorio de Almeida, "The Confrontation between Problems of Development and Environment," International Conciliation, 586 (January 1972), 37-56 at 49-50; and Wilfred Beckerman, "Economists, Scientists and Environmental Catastrophe," Oxford Economic Papers, 24 (1972), 327-44.
- 19 This might be the source of the ecologist's fondness for Rachael Carson, Silent Spring (Boston: Houghton Mifflin, 1962) and the sequel by Frank Graham, Jr., Since Silent Spring (Greenwich, Conn.: Fawcett, 1970).
- 20 Material Policy Commission (The Paley Commission), Resources for Freedom (Washington, D.C.: Government Printing Office, 1952); as late as 1964 this sort of reassurance was appearing. See Herbert L. Schiller, "The Natural Resource Base--Where do We Stand?," World Politics, 16 (1964), 668-76.
- 21 Whatever its limitations, Spaceship Earth has provided a useful model for the reformulation of economic theory. In his

influential article "The Economics of the Coming Spaceship Earth," Kenneth Boulding argues that an economy must not be judged merely by its output but also by what proportion of the resources used in manufacture are returned to the system in useable form. Boulding's work stimulated a "materials balance" approach to evaluating an economy; see Allen V. Kneese, Robert U. Ayres and Ralph C. D'Arge, Economics and the Environment: A Materials Balance Approach (Baltimore: Johns Hopkins Press, 1971) and Peter A. Victor, Pollution: Economics and Environment (London: Allen and Unwin, 1972).

22 Donella H. and Dennis L. Meadows, Jørgen Randers, and William W. Behrens III, The Limits to Growth (London: Earth Island, 1972) describes the logic of exponential growth as well as attempting a computer modelling of global processes.

23 René Dumont and Bernard Rosier, The Hungry Future (London: Andre Deutsch, 1969); Ehrlich and Ehrlich; Meadows, et al., The Limits to Growth.

24 Fri is quoted in Time, 25 June 1973, p. 40. In The Closing Circle, Barry Commoner is especially insistent in his demand for social changes. Samuel H. Ordway, Jr., Resources and the American Dream, argues that, population growth aside, exponentially growing industrial expansion will soon deplete resources, so we must change life styles to prevent resource depletion. Similarly, computer models of global futures (eg., Meadows, et al., Limits to Growth) predict that either population pressure or capital exhaustion is independently sufficient to guarantee the system's collapse.

25 Indeed, one of the most effective criticisms of computerized predictions of doom is that the models are accurate only for the twentieth century. Discrepancies between the model of Forrester's World Dynamics and historical fact appear in some subsystems as soon as 1880, and they are serious in all subsystems by 1850. See H.S.D. Cole and R.C. Curnow, "An Evaluation of the World Models," Thinking About the Future, A Critique of THE LIMITS TO GROWTH (London: Sussex University Press, 1973), 108-34.

26 H.S.D. Cole, Christopher Freeman, Marie Jahoda and K.L.R. Paviett, eds., Thinking About the Future, A Critique of THE LIMITS TO GROWTH (London: Sussex University Press, 1973). Other critiques include: Wilfred Beckerman, "Economists, Scientists and Environmental Catastrophe," Oxford Economic Papers, 24 (1972), 327-44; J.E. Meade, "Economic Policy and the Threat of Doom," Resources and Population, ed. Bernard Benjamin, P.R. Cox and John Peel (London: Academic Press, 1973) 119-46; Martin Shubik, "Modelling on a Grand Scale," Science

174 (3 December 1971), 1014-5; Carl Kayser, "The Computer that Printed W*O*L*F," Foreign Affairs, 50 (1972), 660-8; Robert Boyd, "World Dynamics: A Note," Science, 177 (11 August 1972), 516-9; and John Maddox, The Doomsday Syndrome (London: Macmillan, 1972).

The Limits to Growth may not repay all the attention being devoted to it because the computer program on which the report is based contains a simple but crucial keypunching error (discovered by Thomas J. Boyle) but Meadows maintains his conclusions are unaffected by the error Boyle detected. The controversy is reported in Time, 15 October 1973, p. 47.

27 Christopher Freeman, "Malthus with a Computer," Thinking About the Future, 10-11.

28 Oxford Economic Papers, 24 (1972), 327-44 at 332-3.

29 The compatibility of the two arguments depends largely on the nuances of the resource depletion argument. If it calls for men to change lifestyles in response to inevitable shortages, then there is no conflict with the implications of conservation. If it only predicts hard times ahead (eg., a short-term energy crisis until alternative energy sources are developed to replace oil), then one concerned with resource depletion might favor stop-gap measures such as the Alaska Pipeline.

30 The areas of agreement between ecologists are well reflected in the laws they have succeeded in having enacted. See especially the National Environmental Policy Act of 1969, Public Law 91-190, 91st Congress, S.1075, 1 January 1970; and the Clean Air Act (1967) amendments of 1969 (Public Law 91-137) and of 1970 (Public Law 91-604).

31 Actually, the number of children per family will have to be substantially below 2.1 if zero population growth is to be realized immediately since there are disproportionately many young persons in present populations.

32 Time, 9 January 1973, p. 47.

CHAPTER 10: THE LOGIC OF POLLUTING

Polluting is analyzed as one of the evils that results from independent decision-making. Most people prefer no one polluting to everyone polluting; but individuals making their decisions in isolation cannot organize a scheme for universal non-polluting, and universal polluting is the inevitable outcome of independent decision-making. Pollution control is a coordination problem of the sort discussed in Chapter 3 because everyone prefers a coordinated solution (universal non-polluting) which requires joint decision-making. Indeed, ecologists' model of the logic of polluting emphasizes that pollution control is a coordination problem of the Prisoner's Dilemma variety, with governmental intervention being required to enforce the coordinated solution because of the large numbers of polluters usually involved. (Section 10-2 discusses and dismisses an alternative model of the logic of polluting, Environmental Chicken.) This analysis of the logic of polluting suggests two testable propositions about citizen attitudes toward the principle of pollution control and toward specific mechanisms for enforcing pollution controls. These propositions are tested and supported by evidence surveyed in Section 10-3.

10-1: The Tragedy of the Commons

Ecologists traditionally discuss the logic of polluting in terms suggested by Garret Hardin's 1968 article, "The

Tragedy of the Commons."¹ He draws an analogy between the human environment and a medieval common pasture. He assumes that several herdsmen graze their animals on the common free of charge and that each may put as many animals as he likes on the common. The more animals a herdsman has the better off he is, so each one desires to maximize the size of his herd. If the community is prosperous and each herdsman can afford to purchase many animals, overgrazing soon results and all animals (his own included) become undernourished.

Overgrazing is bad for everyone, but it is the inevitable result of several herdsmen independently deciding on the size of their herds. Up to some point, an additional animal will not deprive those already grazing on the common of food. Beyond this point no herdsman can doubt that each additional animal he puts onto the common deprives all others of food. Each man, however, consults only his own balance sheet in deciding the size of his herd. From this narrow perspective he is likely to add another cow, thinking five slightly leaner cows are better than four slightly fatter ones. He will continue adding to his herd on the common so long as his gain from the new animal outweighs his loss (i.e., from the undernourishment of his other animals). Of course, each new animal also deprives other herdsmen's cattle of food and thus imposes costs on them as well, but the herdsman (having non-tuistic preferences) only considers what affects him in deciding whether to add another animal

to his herd on the common. Since his own ledger shows all the gains but only some of the losses from the new animal, he will continue adding more cows long past the point where total losses (his own plus everyone else's) outweigh gains. Thus, socially disastrous overgrazing results.

It is impossible for a single herdsman acting alone to curtail overuse of the common. He could, of course, refrain from adding more animals to his herd on the common or, for that matter, withdraw those he already grazes there. But a single herdsman acting alone cannot save the common through his own actions because he is not alone in endangering it. Unilateral restraint only assures a herdsman a smaller herd, not a stable pasture.

As a matter of historical fact, medieval pastureland is probably a poor example of Hardin's purpose because these commons were not governed by the rules Hardin supposes. While all citizens used a common pasture, there were usually restrictions on how many animals any one individual could graze there. (If the capacity of the common is overestimated and the number of animals permitted to graze on it is consequently set too high the tragedy might still occur.) A better example of the sort of common Hardin has in mind would be the fisheries. Until recently there were no restrictions on the number of ships or the size of the catch, and the result was dramatic over-fishing and the near-extinction of certain species (eg., of whales).²

In a sense, the environment is a common which everyone is free to use as he pleases. Frequently men use this public good for private gain, either by taking something valuable out of the common environment or by discarding wastes into it. The former is effectively precluded by a complicated system of property rights, so the main problem with overuse of the common environment regards discharges of wastes. Everyone saves the costs of disposing of his wastes by dumping them into the environment. It is cheaper to burn rubbish than to hire it removed; and even hiring it removed is cheaper when it may be dumped without regard to regulations governing operation of a "sanitary landfill." An auto without pollution-control devices is cheaper than one with them. Each polluter also must bear some of the costs of his polluting--he must usually live in the environment he pollutes--but, like the herdsman, the costs of his act of pollution are shared with the community at large. Since the polluter reaps all the gains and pays only part of the costs, he will pollute far beyond the point where total costs begin to outweigh gains.

In more general terms, pollution amounts to an economic externality.³ Pollution is a side-effect of one man pursuing his goals which does not directly affect him and hence he is not automatically forced to take into account in making his decisions. When a farmer decides to add another cow to his herd on the common, he weighs only the "internal" costs and

benefits, the value of the new cow to him and the loss from his other cattle being underfed; he need not automatically consider the "external" costs, others' losses when his new cow deprives their cattle of food. Similarly, the factory smoke imposes costs on those living near the factory--at the very least they must paint their houses and clean their clothes more often--but the industrialist does not have to consider these costs when he makes his production decisions. Whenever there are such externalities, some extraordinary measures are required to force the individual decision-maker to consider such external costs and benefits. In the absence of such methods for "internalizing" externalities, the existence of external costs guarantees that an action will have a higher social cost than individual cost.

Pollution control is a coordination problem for all those who would rather no one (themselves included) pollute to everyone polluting. Independent decision-making is guaranteed to lead to a situation in which everyone (or nearly everyone) pollutes with, of course, some polluting more than others. Joint decision-making is required if actors are to achieve an outcome which virtually all prefer, everyone refraining from polluting.

The Tragedy of the Commons analogy emphasizes that pollution control is a coordination problem of the same variety as the many-person Prisoner's Dilemma. Polluting is the strictly dominant strategy for all actors: each

individual prefers universal polluting to his refraining unilaterally, prefers universal non-polluting to both, and prefers unilateral polluting to all other options. Putting this preference pattern into a payoff matrix representing a two-person game,

Matrix 10-1: Polluter's Dilemma

		<u>Polluter 2</u>	
		not pollute	pollute
<u>Polluter 1</u>	not pollute	(3,3)	(1,4)
	pollute	(4,1)	(2,2)

The similarity between Matrix 10-1 and the matrix at the bottom right of Figure 3-1 demonstrates that the Prisoner's Dilemma is also the Polluter's Dilemma.

To solve coordination problems of this variety, the coordinating scheme must be successfully enforced. The enforcement mechanism which is associated with social processes, the conditional promise of adherence to the coordinating scheme, works only if there are sufficiently few actors involved. Some measure of pollution control can be achieved in this way. Home owners in low-density U.S. suburbs are quite concerned to "keep up the neighborhood," and everyone keeps his lawn tidy in order to set an example which others should (and usually do) follow. Where there are many individuals involved, however, "I will if and only if you will"

enforcement mechanisms fail. Among other difficulties, it is prohibitively expensive for any one man to check to see if everyone else has done X before he does X. Given the large numbers of polluters ordinarily involved in the fouling of any airshed, watershed or neighborhood, the more rigorous enforcement techniques involving governmental intervention are ordinarily required to solve the Polluter's Dilemma.⁴

To this point the Polluter's Dilemma has been described in terms of individuals as actors. Firms, cities and states also face the same sort of dilemma. A Rational Man pollutes because the environment will be polluted by others no matter what he does, and he will benefit more than he will lose from the small increment of pollution he will add. Similarly, a Rational Industrialist realizes that installing a precipitator in his factory's chimney will not make a significant improvement in the quality of his city's air but will mean a significant loss of profits. If one city enacts pollution control ordinances, then industry will be driven out of that city to another with more lenient regulations imposing less costs on polluting industries. Neither can any state enact anti-pollution laws without driving industry to other more lenient states.⁵ Just as individuals must coordinate their anti-pollution efforts, so too must firms, cities and states. Given the improbability of informal enforcement mechanisms succeeding in coordinating the efforts of fifty states and

thousands of cities, the U.S. government will probably have to intervene to enforce coordinating schemes to curtail pollution.

10-2: Environmental Chicken

One important conclusion of the foregoing analysis of the logic of polluting is that unilateral efforts at pollution abatement are irrational. A group of Rational Men will attempt to coordinate their behavior and jointly curtail their pollution. In the process they will establish enforcement mechanisms to assure that everyone refrains from polluting and no one takes advantage of others' restraint. But, in the absence of such coordinating devices, no Rational Man would attempt to save the environment single-handedly.

This conclusion directly contradicts a very popular presupposition. A recurring theme in the ecology literature is that if men only appreciated fully the import of the ecological crisis they would naturally do their bit to save the environment, in concert with others if possible but individually if necessary. Most ecological action-plans include proposals for legislation enforcing the coordinated solution, universal non-polluting, but the same plan also reflects at length on the question, "What can I do?" Ecologists clearly prefer the coordinated solution (enforced universal non-polluting) but, lacking that, they certainly do

not think it irrelevant to discuss what the individual acting alone should do. Quite the contrary, ecologists argue that the fact that others will behave irresponsibly is all the more reason for a man to be guided by the "ecological conscience." Their argument emphasizes the overwhelming importance of protecting the environment: someone must save our environment, and if others are unlikely to do what is required then it is all that more important that the enlightened members of the community do what is required.⁶

This analysis suggests that pollution control is a coordination problem of the Chicken rather than Prisoner's Dilemma variety. (See Figure 3-1 for description of this game.) In Prisoner's Dilemma everyone has a strictly dominant strategy (i.e., a single strategy that is the best counter to any strategy others might select), and this strategy is contrary to the realization of the coordinated solution. In Chicken, no one has a strictly dominant strategy; the strategy that is the best counter to one move is not best to counter another move. Thus, actors choose their strategies in Chicken on the basis of which move they expect from their opponents. In the example given in Figure 3-1, the boy would continue driving straight if he expects the other to swerve; and he would swerve if he expects the other to continue straight. In the pollution application, a man will continue polluting so long as he expects someone else

to take the necessary steps to save the environment, and he will take those steps himself only if he expects that others will not. Expressing this in terms of a payoff matrix,

Matrix 10-2: Environmental Chicken

		<u>Polluter 2</u>	
		pollute	not pollute
<u>Polluter 1</u>	pollute	(-10, -10)	(15, -5)
	not pollute	(-5, 15)	(5, 5)

The difference between Environmental Chicken and Polluter's Dilemma are due to differences in actors' preference orderings. Preference orderings giving rise to each situation are displayed in Figure 10-1.

Figure 10-1

	<u>Polluter's Dilemma</u>	<u>Environmental Chicken</u>
(worst)	1. unilateral restraint	1. universal polluting
	2. universal polluting	2. unilateral restraint
	3. universal restraint	3. universal restraint
(best)	4. unilateral polluting	4. unilateral polluting

The two rankings are identical except that actors' worst and second worst outcomes are reversed. The question of which is the appropriate model for the problem of pollution control can be rephrased as a question of which preference ordering is the more plausible.

Comparing the costs and benefits of unilateral restraint

as against universal polluting, there is one very large cost that is common to both: the pollution produced by everyone else. The question is simply whether the individual ought add his own little bit of pollution to that vast amount that would be in the environment anyway. A man always gains something from polluting (he reduces costs of waste disposal), so there is a prima facie case for the rationality of preferring universal polluting to unilateral restraint. Hence, there is a prima facie case for the Polluter's Dilemma model.

Unilateral restraint can be preferable to universal polluting only if it has some advantage that is greater than the lost opportunity to reduce costs by **dumping** wastes into the environment. The case for the Environmental Chicken model must rest on an absurd claim about the efficacy of a single man's anti-pollution efforts. Unilateral restraint is superior to universal polluting only if the one man's restraint will avert an ecological catastrophe. In the Figure 3-1 example, a single driver swerving averts the collision; in traditional applications to nuclear confrontations, a single superpower backing down averts a nuclear exchange. If a single actor's restraint will make little if any difference then the Polluter's Dilemma rather than the Environmental Chicken model is appropriate.

A single actor's restraint will usually matter little to the solution of a pollution problem. Most citizens will not enjoy noticeably cleaner air if they alone purchase a

new automobile with special anti-pollution devices attached to the exhaust system. A single factory will rarely be alone in fouling a river or an airshed, so its unilateral anti-pollution efforts will not suffice to cleanse it. Only on the international level is Environmental Chicken an appropriate model: there a very few major polluters can make the difference between a filthy environment and a clean one. This is more fully discussed in Chapter 13.

10-3: Testing the Logic

Two testable propositions emerge from the preceding theoretical discussion of the logic of polluting: (1) most men will ordinarily support governmental attempts to enforce the coordinated solution to the Polluter's Dilemma (universal non-polluting); and (2) "voluntary" abatement programs will attract few volunteers. These two predictions are quite accurate descriptions of the U.S. experience in the last decade.

Successive opinion surveys trace a marked trend, beginning in the mid-1960's and continuing to the end of the decade, toward increasing public support for environmental protection measures.⁷ Unfortunately, survey results are largely incomparable because different components of the ecology issue were probed in successive surveys; for example, there is no guarantee that attitudes towards water pollution in 1965 and air pollution in 1968 are comparable. Even when

the same issues were involved, investigators phrased the questions in slightly different ways. Still, the trend is clear enough. By the end of the decade fully four-fifths of Americans regarded pollution as among the half dozen problems deserving "highest priority" attention. Indeed, nearly two-fifths say it is the most serious problem.⁸ Perhaps more significantly, sixty percent of businessmen (expected to be most pro-pollution, to anticipate the discussion of Chapter 11) name pollution as a "highest priority" item, and they rank it fifth out of ten such issues.⁹ Empirical evidence clearly bears out the prediction that most people support the general goal of governmental anti-pollution regulations.

The second prediction, that voluntary programs will fail to attract volunteers, is also supported. There are, of course, innumerable community efforts to organize voluntary pollution abatement programs. In one survey, sixty-nine percent of business executives interviewed reported that their company participates in community-wide or industry-wide anti-pollution or environmental protection activities.¹⁰ (In this context, however, "participation" is a very vague term. A company is participating by, for example, sending a representative to meetings of the Mayor's Task Force on Pollution even if his role is to obstruct the efforts of that group to devise an effective program.) Success or failure of voluntary abatement programs must, of course, be measured

in terms of reductions in pollution; and, in their study of "Voluntary Compliance and Pollution Abatement," Roos and Caldwell find that voluntary programs fail miserably on this criterion.¹¹

The analysis of the logic of polluting suggests that voluntary programs will fail because the Polluter's Dilemma is a coordination problem of the variety requiring governmental intervention to enforce the coordinating scheme. It is significant that business executives are found demanding (fifty-seven percent as against six percent opposed) that the federal government step up its regulatory activities to control pollution. Similarly, most business executives prefer a single national standard for air and water pollution control, land use, etc. to the present local standards. Apparently businessmen recognize pollution control as a coordination problem, both for themselves and for cities and states, and they desire that the coordinated solution (universal non-polluting) be enforced through federal regulations.¹²

NOTES

¹ Garret Hardin, "The Tragedy of the Commons," Science, 162 (13 December 1968), 1243-48. See also Beryl L. Crowe, "The Tragedy of the Commons Revisited," Science, 166 (28 November 1969) 3909, a critique of Hardin's essay.

² E.C.K. Conner, Common Land and Inclosure, 2nd edition (London: Frank Cass and Co., Ltd, 1966), 9-10. H.S. Gordon, "The Economic Theory of a Common Property Resource: The Fishery," Journal of Political Economy, 57 (1954), 124-42.

³ See, eg., William J. Baumol, Welfare Economics and the Theory of the State, 175; E.J. Mishan, The Costs of Economic Growth (Harmondsworth: Penguin, 1967); and Peter A. Victor, Economics of Pollution (London: Macmillan, 1972), 17-28.

⁴ Hardin recognizes the need for "mutual coercion mutually agreed upon" to solve the problems posed by the Tragedy of the Commons. See also Thomas C. Schelling, "On the Ecology of Micromotives," Public Interest, 25 (1971), 61-98; and William J. Baumol, Welfare Economics and the Theory of the State, 174-5, 177-9.

The importance of group size is often noted: Mancur Olson, The Logic of Collective Action; James Buchanan, "Ethical Rules, Expected Value and Large Numbers," Ethics, 76 (1965), 1-13. Explanations of why it should make such a difference are rather rarely seen. The only reason that group size matters is that in a large group each man's behavior has less of an impact on others; see Baumol, 179; and Norman Frohlich and Joe Oppenheimer, "I Get By With a Little Help from My Friends," World Politics, 23 (1970), 104-20.

⁵ A firm that threatens to relocate if stiff anti-pollution legislation is enacted is often making an obviously idle threat in light of the capital investment it has in its physical plant, etc. A threat to "phase out" an operation in a city or state with stringent anti-pollution laws should be taken more seriously. By failing to install new equipment in the Gary factory, for example, an instead putting it in the Cleveland plant, U.S. Steel might over the course of several years close down the Gary operation altogether.

Cities and states have nothing to fear from the exodus of polluting industries so long as there are other non-polluting industries that will move into the city or state and provide the jobs, tax revenue, etc., that was lost when the polluter left.

⁶ See, eg., Richard Saltonstall, Jr., Your Environment and What You Can Do About It: A Citizen's Guide (New York: Walker, 1970); Robert Disch, The Ecological Conscience: Values for Survival (Prentice-Hall, 1970); and the Whole Earth Catalogue. Similar reasoning is behind anti-litter campaigns, "Keep Britain Tidy" and "Every Litter Bit Hurts" (in the U.S.), and the "Plant a Tree in '73" program.

⁷ Gilbert F. White, "Formation and Role of Public Attitudes," Environmental Quality in a Growing Economy, ed. Henry Jarrett (Baltimore: Johns Hopkins Press, 1966), 105-27 and Cecile Trop and Leslie L. Roos, Jr., "Public Opinion and the Environment," The Politics of Ecosuicide, ed. Roos (New York: Holt, Rinehart and Winston, 1971), 52-63 provide summaries of the results of several surveys. Results of specific surveys are reported in: Harris Poll, reprinted in the Congressional

Record, 113 (25 July 1967), A 3763-4; H.G. Frederickson and Howard Magnas, "Comparing Attitudes Toward Water Pollution in Syracuse," Water Resources Journal, 4 (1968), 877-89; Gallup Poll commissioned by the National Wildlife Federation, reprinted in the Congressional Record, 115 (20 December 1969), 40553-8; Rita James Simon, "Public Attitudes Towards Population and Pollution," Public Opinion Quarterly, 35 (1971), 93-9; Arvin W. Murch, "Public Concern for Environmental Pollution," Public Opinion Quarterly, 35 (1971), 100-6; and Gilbert Winham, "Attitudes on Pollution and Growth in Hamilton, or 'There's An Awful Lot of Talk These Days About Ecology,'" Canadian Journal of Political Science, 5 (1972), 389-401.

⁸ Roos; Winham.

⁹ Robert S. Diamond, "What Business Thinks," Fortune, 81 (February 1970), 118-9, 171-2, a report of a survey by Daniel Yankelovick Inc. of 270 chief executives of companies listed in Fortune's annual 500 directory.

¹⁰ ibid.

¹¹ Ted Caldwell and Leslie L. Roos, Jr., "Voluntary Compliance and Pollution Abatement," The Politics of Ecosuicide, ed. Roos, 236-67.

¹² Diamond, op.cit.; the figures for national versus local standards were fifty-three percent for national ones, thirty-five percent for local ones. Diamond's open-ended questions drew responses which the logic of polluting leads us to expect: "The way a large number of business leaders see it, substantial voluntary action on behalf of a single company is wasteful of corporate assets and ineffective in cleaning up the environment. They believe action on pollution must be collective. Otherwise, they argue, the costly efforts of a few companies won't even be noticed if corporate neighbors are still fouling the air and water. 'We won't get this situation cleaned up except by laws that are enforced,' said a Pittsburg executive. 'If I correct my plant problems, but my competitor doesn't, that company has a competitive advantage. I have committed huge sums; they haven't. In fairness to my stockholders, therefore, I can't make the first move.'"

Governmental intervention (as opposed to informal "I will if you will" arrangements) is necessary to enforce the coordinated solution because businessmen do not suppose their fellows will keep up their end of the bargain. It is, therefore, significant that they perceive others' voluntary compliance with anti-pollution programs as inadequate. Diamond reports that executives rank (on a 1 to 10 scale) electric utilities as best compliers with a 6.0 and paper and pulp industries worst with a 4.4. More significant for present purposes is that everyone has a low rating.

CHAPTER 11: ANTI-ECOLOGISTS

The analysis of the "Logic of Polluting" leads one to expect that most Rational Men would ordinarily support governmental efforts to protect the environment. Empirical observations reported in Chapter 10 confirm that most people ordinarily do so. Talking in such broad generalities, however, obscures interesting and important nuances. Some people actually oppose pollution abatement efforts, and others display noticeably restrained enthusiasm for such proposals. Explaining these exceptions is in many ways the more demanding test of the Rational Man analysis of polluting.

If the theory is correct, two identifiable groups would be expected to hold peculiar attitudes toward the ecology issue. The first group, industrialists, are expected to oppose efforts to curb polluting because they profit immensely from the practice. The position of a second group, the poor, is more complicated. Because they live in the more polluted regions of the environment, they are expected to attach more importance in an absolute sense to pollution control than wealthier citizens; but it is also rational for them to attach a lower priority than the rich to pollution control in relation to other social problems. Again, empirical observation tends to confirm these predictions of the Rational Man explanation of polluting.

11-1: Ecological Attitudes of Industrialists

The argument that most men will support governmental anti-pollution efforts most of the time is based on the fact that pollution harms everyone. Environmental protection is one component of the "public interest," understood as the collection of interests of all citizens share qua citizens. Other things being equal, the presumption is that everyone will act to promote the public interest (in this case, to support efforts to provide mechanisms for social coordination) simply because anything in the public interest is also by definition in his own interest.¹

Each man has many interests, some of which he shares with all his fellow citizens and most of which he does not. Some individuals have particular personal interests in polluting which outweigh their shared interest in abating pollution. Of course, everyone gains something from polluting but for most people the gains are marginal (eg., slightly better gasoline mileage in his automobile). Since ordinary people gain so little from polluting, they prefer not polluting in a world where no one else pollutes either to continuing to pollute in a world where all others pollute as well. Consequently, they support government bans on pollution, which are really little more than mechanisms for coordinating this shared impulse. Industrialists are an exception because their profits from polluting are extraordinarily large. Deteriorating environmental quality pains

them but not nearly so much as polluting profits them. Hence, they prefer a world in which all (themselves included) pollute to one in which no one pollutes. They oppose legislative efforts to curb pollution, and, depending on how profitable they find polluting, they might even violate antipollution laws once enacted.

Several types of empirical evidence can be used to test this prediction. The results of all tests agree in naming industrialists as the most important group trying to prevent enactment of environmental protection ordinances. Perhaps the most reliable form of evidence on such questions is the case study, and several studies of environmental policy decision-making do label industrialists the culprits. In his examination of East Chicago and Gary, Indiana, Matthew Crenson finds that the cities' industrialists were the major stumbling block for antipollution legislation. Oil refiners and steel producers of East Chicago were less successful in blocking smoke abatement legislation than U.S. Steel in Gary only because Gary remains very much a "company town", U.S. Steel being The Company. Similarly, George Hagevik's study of Los Angeles finds opposition to the proposed anti-pollution ordinances coming predominantly from industrialists, who joined together into the Western Oil and Gas Association to attempt to block proposed limits on industry's use of high sulphur fuel oil and the proposed requirement that they substitute natural gas for fuel oil during summer months.²

A second form of empirical observation also shows industrialists to be most hostile to antipollution moves. Matthew Crenson surveys "community leaders" in fifty-one American cities and finds that industrialists have a reputation for opposing environmental protection ordinances. Only 8.2% of "leaders" perceived "industrial corporations and their executives" as supporting anti-pollution measures, while 94.8% saw them opposing air pollution controls. The Chamber of Commerce has a reputation for being next most hostile to antipollution efforts, but only 15% of the "leaders" perceived antipollution sentiments here.³ The reputational approach is beset with many familiar problems, the most serious being that a reputation may or may not be justified. Industrialists might deserve their reputation for opposing environmental protection measures; that is, they might have the reputation because they actually opposed antipollution legislation in past political controversies or because they quashed an inchoate ecology movement in the city before legislation was actually proposed. It is also possible that they do not deserve their reputation, that they have done nothing and would have done nothing to block environmental protection legislation. The results of reputational analysis are interesting, perhaps even enlightening when combined with other forms of empirical evidence, but alone they must always be inconclusive.⁴

The final empirical test of the prediction that industrialists oppose antipollution legislation uses interviews with

industrialists themselves. Unfortunately, the only available survey data are based on interviews with businessmen generally and not only industrialists. Prosperous individuals who profit little from pollution would be expected to be most pro-ecology, but the survey data mix their responses with those of industrialists who profit from polluting and would be expected to be firmly opposed to efforts to outlaw it. Still, respondents were predominantly industrialists, and their responses are those expected from Rational Industrialists. Especially significant are responses to the question, "What would be the single most effective incentive to business to do something more about pollution?" The vast majority presses for "tax credits for pollution-control costs," an antipollution policy costing industrialists little if anything. They identify as the single least effective incentive "passing on costs to consumers," which ordinarily would increase the prices of products, leading to decreased sales and decreased profits.⁵

Three ways of testing the empirical validity of the prediction all support in part or in whole the Rational Man model's prediction that industrialists will be most opposed to pollution control measures. The most convincing evidence comes from case studies, but this evidence is also reinforced by reputational analysis. Crucial evidence could be obtained through in-depth interviewing of industrialists, but this is yet to be attempted. A survey of "businessmen"

(a category including but not confined to industrialists) does tend to support the Rational Man model's prediction.

11-2: Ecology and the Poor

The Rational Man model's prediction regarding the ecological attitudes of impoverished citizens falls into two parts. The poor man is expected (1) to rank pollution lower in relation to other social problems than does his middle class counterpart, but (2) to think it a more important problem than do men with average incomes. That is to say, a poor man will take a more serious view of many social problems; pollution is one problem he thinks the middle classes frequently underestimate, but it is far from being the most underestimated problem. This is equivalent to the unsurprising observation that proportionally more of the problems facing a poor man require political solutions.

The logic of the first half of the prediction is rather complicated. The poor are expected to place pollution lower in the hierarchy of social problems than do citizens with average incomes because, while environmental decay threatens the quality of everyone's life, the poor man's existence is also plagued by other more pressing threats. As discussed in Section 2-5, if a man wants a good for which there are prerequisites (so he cannot have the good unless he first acquires those prerequisites) then it is rational for him first to pursue those prerequisites. Ecologists claim, among other things, that environmental deterioration endangers

a man's health and threatens the survival of the human species. All other goals men pursue probably presuppose reasonably good health and almost certainly presuppose life, so if the ecologists are right in their factual claims it would be rational for everyone to want to protect the environment. The crucial difference between the wealthy and the poor man in this respect is that the wealthy man is unlikely to have any more immediate threats to his health or survival, whereas the poor man will have many more urgent threats. A wealthier man, not having to face the poor man's terribly immediate problems, is free to focus on longer range threats, among them pollution. If an individual is poor and unemployed, however, malnutrition within the next month poses more of a threat to his health than the effects of sulphur particles accumulating in his lungs during the next decade. It is rational for the poor to be more concerned with these more immediate dangers than with the temporally distant threat of an eco-catastrophe.⁶

The reasoning behind the second half of the prediction is more straightforward. The poor man is expected to think pollution a more serious matter than the average man supposes it to be because, quite simply, the poor man's environment is more polluted than the average man's environment. Poverty often forces men to live in the most polluted region of the environment, the central city. Wealthier citizens can afford to move to the relatively unpolluted suburbs or, if they do elect to live inside the inner city, they can afford to iso-

late themselves from its most disagreeable characteristics by hiring security guards, installing air conditioners with expensive filtering devices to scrub city air before breathing it, etc. Since the poor cannot afford such expensive options, their environment is more polluted than that of the wealthier individual. All else being equal, Rational Men would be expected to be more interested in cleaning their environment the more polluted it is.

Empirical evidence supports the first half of this prediction especially well. Opinion surveys consistently reveal significantly less enthusiasm for the ecology issue among the poor than among other income groups.⁷ Furthermore, the issues that the poor put ahead of ecology--employment and housing--fit quite well into the Rational Man explanation of why the poor will not rank pollution as high on the list of social problems as the rich rank it.⁸ Finally, the poor and blue collar workers tend to give the reasons the Rational Man model would expect men in their positions to give for opposing the ecology issue. They are more inclined to note that antipollution measures will force people out of their jobs.⁹

In addition to the direct test of the model's predictions, the logic of the explanation can also be indirectly tested. The analysis suggests that ecology will be an issue of the upper classes, that it will be championed by the wealthier segments of the community. (Of course, this does

not mean that the wealthy will benefit more from environmental protection, which is explicitly denied below.) The theoretical rationale for this distribution of support for the ecology issue is that the poor will be more concerned with other social problems which are more immediately threatening to them; wealthier citizens, not suffering from such difficulties, rationally will be more interested in solutions to longer range problems (such as pollution) which they find personally more threatening. If this analysis is correct, we would expect an inverse relationship between these two classes of issues: a man who worries about pollution should be relatively unconcerned with unemployment, and conversely, one who is concerned with unemployment as a social problem should not worry much about the environment.

A recent article by George Winham offers some evidence of this sort of negative relationship between concern with ecology and concern with unemployment.¹⁰ His research findings are very much limited by his methodology, which is less careful than most. Respondants were first asked to name the "major problem" facing the city, pollution and unemployment being among the choices. Secondly, they were asked if the city should work for industrial development. The survey's structure obviously precludes a direct correlation of concern about pollution with concern about unemployment. A man must choose either one or the other as the city's major problem. Therefore, Winham is forced to use indirect methods to dis-

cover the relationship between attitudes on these two issues; he uses as his intervening variable the respondent's attitude toward industrial development. First, he reports a strong positive correlation between the belief that unemployment is the city's major problem and that the city should work for industrial development; and second, he notes a strong negative correlation between the attitude that the city should work for industrial development and concern with pollution as the city's major problem. No strong conclusions can be drawn from such evidence, but this evidence is at least consistent with the prediction that those who worry about pollution do not worry about unemployment and conversely.¹¹ It is unfortunate that Winham chooses such a round-about method to test such a straightforward relationship.

The second half of the prediction suggests that since the poor man's environment is more polluted, he will be more interested in cleaning it. It is relatively easy to observe and explain the fact that the poor man's environment is more polluted than that of wealthier citizens. This is in part a consequence of the "logic of metropolitan growth" which has throughout two centuries moved the poor into inner city neighborhoods evacuated by wealthier men in their continuing flight to the ever-expanding suburban ring. The pollution of the poor man's environment is also a consequence of zoning, the traditional method of controlling pollution. Cities

established zones for polluting industrial activities, zones for commercial enterprises, and "residential" zones where none of the other activities were allowed. The cheapest homes, of course, were in the "industrial zone" so the poor person's low income relegated him to life near to the factory and, consequently, to suffering most from its pollution.¹²

The second half of the prediction is based on the assumption that a Rational Man will react more violently against a more polluted environment than a less polluted one. Generally, a man with more serious problems should rationally be more intent on solving them. Income levels enter the picture only by the back door, so to speak. Because a man is poor, he is forced to live in a more polluted environment, and because he lives with more pollution he will be more concerned that it be removed.¹³

It is difficult to test this prediction because of peculiar tactical problems facing the poor man. He thinks many other social problems are more serious than pollution, and he must be cautious lest others use his enthusiasm for pollution control as an excuse for banning pollution instead of solving problems he thinks more serious. Thus, the poor man must underplay his desire for environmental protection because such a program is bound to take resources away from efforts to meet his more immediate problems. To test the prediction that the poor are more worried with pollution than

the wealthier citizens, therefore, it is necessary to find circumstances in which expressing a concern for polluting will not detract from the importance of other social issues more worrisome to the poor man.

One good way to explore this question is to examine results of surveys asking citizens how much they would be willing to be taxed for pollution control. Usually this information was collected for quite different purposes, and as a result the data are often not presented in a useable form. Economists use this sort of survey to see if the total amount of tax payments people are willing to make exceeds the total cost of pollution abatement; if it does, then the antipollution program should be put into effect and financed by taxing people the rate they expressed a willingness to pay, but if not then the polluted world is optimal.¹⁴ Occasionally, they break down their data by income groups, and from such a breakdown much can be surmised about the relative importance of pollution control to the rich and to the poor. Table 11-1 is based on results of Frederickson and Magnas' 1968 survey.

Averaging the amounts of tax each group would be willing to pay, the poorest income class would be willing to pay \$6.07, the next \$8.18, the third \$10.39, and the richest \$11.34. Figure 11-1 plots the average percentage of his income a man is willing to be taxed against average income.

Table 11-1: Q: "How much would you be willing to be taxed for water pollution control?"

<u>Tax</u>	<u>Income</u>			
	\$3-7,000	\$7-10,000	\$10-15,000	over \$15,000
\$0	24%	14%	13%	16%
3	19	16	8	3
5	22	21	14	10
10	24	28	28	28
15	3	7	15	13
20	8	14	22	30

Source: H.G. Frederickson and H. Magnas, "Comparing Attitudes Toward Water Pollution in Syracuse," Water Resources Journal, 4 (1968), 877-89.

Figure 11-1

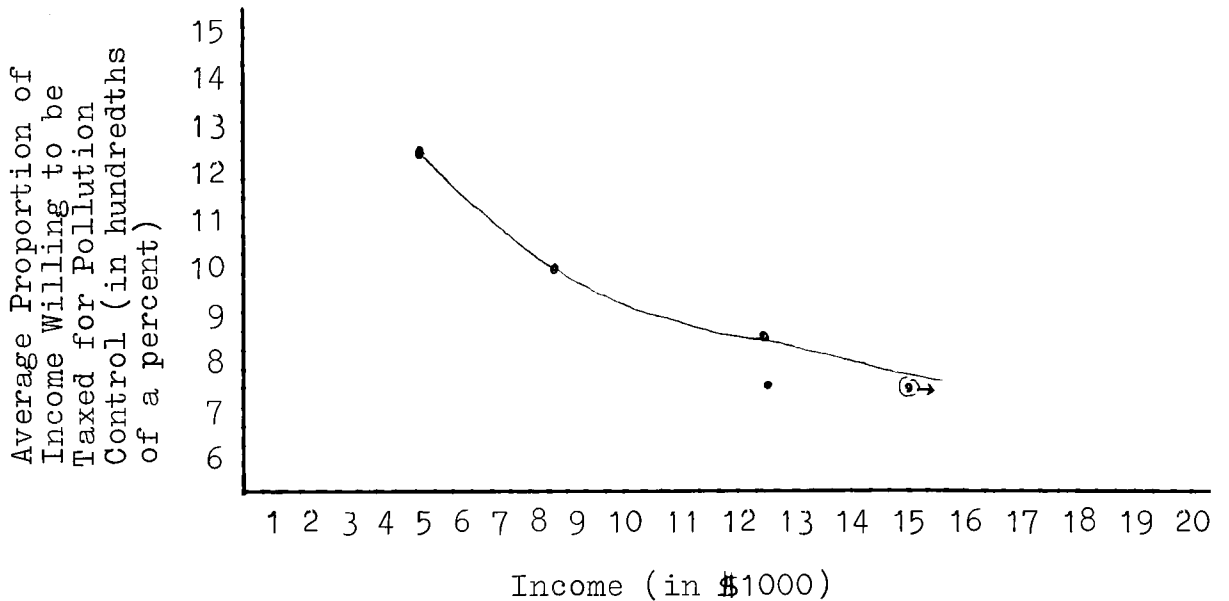


Figure 11-1 shows that the poor are willing to pay a larger proportion of their income toward taxes for pollution abatement than the rich. For instance, the \$3-7000 income group is on average willing to pay over half again more than the "over \$15,000" group. This offers at least provisional support to the contention that the poor are absolutely more concerned than the rich about pollution.

NOTES

¹ This borrows from Brian Barry, "The Public Interest," Proceedings of the Aristotelian Society (Supplement), 38 (1964), 1-18.

² Matthew A. Crenson, The Unpolitics of Air Pollution (Baltimore: Johns Hopkins Press, 1971), Chapter 2. George H. Hagevik, Decision-Making in Air Pollution Control (New York: Praeger, 1970).

³ Crenson, 89.

⁴ See Willis D. Hawley and Frederick M. Wirt (eds.), The Search for Community Power (Englewood Cliffs, New Jersey: Prentice-Hall, 1969), which collects papers from pluralist advocates of the "decisional approach" and elitist champions of the "reputational approach."

⁵ Robert S. Diamond reports the results of a Daniel Yankelovich poll of business leaders in "What Business Thinks," Fortune, 81 (February 1970), 118-9, 171-2. On the question of the most effective incentive, respondents picked "tax credits" over the next most popular item, "industry-wide action," by 59% to 11%. On the question regarding the least effective incentive, "pass on costs to consumers" beat "improvement in the working environment" 47% to 16%.

⁶ This is similar to the argument of William J. Baumol, "Environmental Protection and the Distribution of Incomes," Problems of Environmental Economics (Paris: Organization for Economic Cooperation and Development, 1972), 67-73.

Edward Banfield is quite confident of his observation that

the poor are relatively present-oriented and that the wealthier are more future-oriented. See his Political Influence (Glencoe, Illinois: Free Press, 1961) and The Unheavenly City (Boston: Little Brown, 1968), Chapters 4 and 11. The same logic is apparent in the "ethos theory" of voting proposed by Banfield and James Q. Wilson, "Public Regardness as a Value Premise in Voting Behavior," American Political Science Review, 58 (1964), 876-87. It is likely that the poor prefer private, divisible goods to more diffuse "public goods" for precisely the reasons discussed here: divisible goods tend to satisfy more immediate needs. Banfield himself offers a similar explanation for the present-oriented ethos of Southern Italian peasants. In The Moral Basis of a Backward Society (Glencoe, Illinois: Free Press, 1958), Banfield argues that, given the absence of extended families in that region, a peasant justifiably fears that should he die young his children would be "left on the streets," and he accumulates private goods to hedge against this eventuality.

⁷ These findings are reported in Trop and Roos; White; Frederickson and Magnas; Winham; Crenson (p.15); and a survey of St. Louis, Missouri, conducted by the Public Administration and Metropolitan Affairs Program of Southern Illinois University, Public Awareness and Concern with Air Pollution in the St. Louis Metropolitan Area (Washington, D.C.: Government Printing Office for the Department of Health, Education, and Welfare, 1965).

⁸ Frederickson and Magnas divide respondents according to place of residence, city or suburb. On the assumption that most suburbanites are relatively wealthy and most city-dwellers are relatively impoverished, their conclusions are supportive of this point.

It is important to note that when the poor complain of inadequate housing they may be complaining of pollution in an indirect way. Their housing may be inadequate because there is trash in their garden, the air is filthy and smelly, etc.

⁹ Winham, 394.

¹⁰ Winham studies attitudes in a Canadian city, which may not be the same as studying American attitudes. The only defense for using such a study as an indicator of American attitudes is that Canadians differ from Americans in so few respects that it is unlikely to lead to errors.

¹¹ Crenson's study contains some evidence that might seem related to this point, but the ecological fallacy stands in

the way of using his data here. Crenson studies which items appear together on a city's political agenda, whereas the prediction here is that no individual will worry about both unemployment and pollution as issues. This prediction may mean that in a heterogeneous city both pollution and unemployment will be issues, with the poor moaning about unemployment whenever the rich begin to worry about environmental protection. Then again, in a relatively homogeneous city, what worries one man worries all--where there is much unemployment and most people are poor, only the unemployment issue is likely to arise. Thus, information about which issues are found together on civic agendas has no bearing on the question at hand.

¹² For direct evidence, see A. Myrick Freeman, III, "Distribution of Environmental Quality," Environmental Quality Analysis, ed. Allen V. Kneese and Blair T. Bower (Baltimore: Johns Hopkins Press, 1972), 243-78.

Banfield, The Unheavenly City, Chapter 2 discusses "The Logic of Metropolitan Growth." Traditionally, zoning statutes only regulated the class of activities that could go on inside certain zones. The industrial zone always ended up being more polluted because industries are "dirtier" than shopping malls, for example, but the relationship between the "industrial zone" and the "polluted zone" was only circumstantial. Recent legislation in some states (eg., New York) works to strengthen the link, specifying that more polluting was permissible in an industrial zone than in a commercial or residential zone. See Hagevik, Decision-Making in Air Pollution Control.

Tests of the correlation between property values and pollution levels consistently conclude that homes in polluted areas are worth less than otherwise identical ones in clean areas of town. See Ronald G. Ridker, Economic Costs of Air Pollution: Studies in Measurement (New York: Praeger, 1967) Chapters 6 and 7; Ridker and John A. Henning, "The Determinants of Residential Property Values with Special Reference to Air Pollution," Review of Economics and Statistics, 49 (1967), 246-57; Robert J. Anderson, Jr. and Thomas D. Crocker, "Air Pollution and Residential Property Values," Urban Studies, 8 (1971), 171-80; and Anderson and Crocker, "Air Pollution and Property Values: A Reply," Review of Economics and Statistics, 54 (1972), 470-4. Assuming that less valuable homes are generally inhabited by less prosperous individuals, one concludes that the poor are exposed to more polluted air. This is how David Pearce answers the question, "Is Ecology Elitist?," The Ecologist, 3 (February 1973), 61-3.

¹³ Dr. Pangloss would be quick to point to the fact that most residents of the inner city have the option of moving to a less polluted region, which suggests that perhaps the poor man does not mind filth as much as the rich man. While both the poor man and the rich man can migrate to less polluted places, however, it is important to recall that their options

are not quite identical; the rich move to the clean suburbs and enjoy the advantages of city life without many of its disadvantages, but the poor black has little choice but to return to working the depleted soil of the family farm down South. The fact that the poor stay and the rich leave the city only means they have different options, not that one's nasal membranes are more sensitive than the other's.

14 This discussion incidentally discredits this way of estimating the demand for public goods. Assume two communities (one wealthy, the other poor) are both attempting to provide the same service (eg., education) costing the same amount. Further assume that each community has an identical "want" for this service, as measured by the number of people wanting it and strength of their wants. It is entirely likely that the rich community will succeed in providing the service costing, say, one percent of its annual income, while the poor community (which wants it equally badly) fails because it would cost ten percent of its annual income. For similar critiques, see Peter A. Victor, Economics of Pollution, 34-5; and the U.S. Supreme Court case, San Antonio Independent School District v. Rodriguez, 411 US 1 (1973), which raised the issue but found no Constitutional grounds for redress.

CHAPTER 12: ENVIRONMENTAL POLICY

Were individuals behaving as Rational Men, most of them would strive to coordinate their efforts to reduce pollution as the discussion of the logic of polluting suggests. Survey research reveals the kind of widespread popular support for the ecology issue that would be expected from Rational Men. The Rational Man explanation of this issue is further supported by the composition of the anti-ecology bloc; Chapter 11 demonstrates that industrialists and poor people stand to gain from their opposition.

This explanation of popular support for environmental protection programs can be subjected to a further test by examining the content of enacted environmental policy. In addition to simply striving to coordinate their antipollution efforts, Rational Men would also govern their collective operations by the relatively precise principle of Fairness as is argued in Chapter 5. If Americans are truly reacting to the environmental crisis as Rational Men, then their favored policies will be reflections of the Fairness Principle. This prediction is tested by first examining options for environmental policy and by then considering the fairness of each option. U.S. policy is found to conform quite well to the expected, the fair environmental policy.

The Rational Man model suggests that some deviations from the fair policy are to be expected, however, Chapter 11 demonstrates that it is rational for some men to oppose en-

vironmental protection measures, and it is only reasonable to suppose that these opponents (especially industrialists) will occasionally prevail in the decision-making process. Deviations from the expected fair policy, then, can be explained in Rational Man terms by some group of politically powerful, self-interested citizens that produced them. Such an explanation is at least plausible if there exists a group with the inclination and power to force policy in the direction it took. The present test of this explanation will consist simply in the search for such groups. Of course, this only demonstrates the plausibility of the Rational Man explanation of deviations. To test it rigorously, one must actually examine the decisional process in every instance of deviation to see if these groups actually did control the policy decision.

12-1: Policy Options

Logically, it might seem that the appropriate method of saving the environment depends on the nature of the threat to it. Some ecology issues, particularly the disamenity and health hazard arguments against pollution, seem to refer to local problems. The logic of the traditional political response to pollution, zoning, is that truly local problems are amenable to local solutions. If the problems associated with polluting are really confined to the neighborhood of its source, then the problems can be contained by requiring that polluting activities be confined to industrial zones.

Provided we are willing to write off the ecology of these local areas, there is no need for efforts to stop pollution-- we can contain its ill effects instead.¹ Unfortunately, however, pollution is not only a local problem no matter what view one takes of the ecology issue. Since it is not, all four component arguments of the ecology issue imply the same sort of solution, a broad-based attack aimed at curtailing polluting activities per se and not just their location.

The key to the failure of zoning is that pollution is far less localized than the zoning solution implies. For one thing, pollutants do not respect political borders; and while zoning can control the location of polluting industries it cannot control the way natural forces disperse factories' wastes. The flow of pollutants is governed by air currents and watersheds, so the physical neighborhood of the industrial plant is only one of many areas that its pollutants may render unfit for human habitation. With nature's cooperation, zoning might leave some areas unpolluted, but the polluted areas will certainly extend far beyond the zone in which polluting industries are permitted to operate.

Even if zoning succeeds in establishing polluted and pollution-free areas, it cannot avoid the need to subject some people to pollution. Someone (indeed, many people) must enter the most polluted industrial zone if production is to continue. All zoning can do in such circumstances is to

warn people of what goes on inside the zone. Surely advocates of ecology, no matter how they understand the issue, are not simply urging that people be given due warning of the dangers or disamenities they face. Rather, the ecology issue means, at the least, that no one must be forced to endure pollution.²

In any case, one could not realistically hope to localize all polluting activities because pollution is a by-product of both production and consumption. Production could, in principle, be confined to a few compact zones, but it would be much more difficult to similarly confine consumption. The two processes generate somewhat different kinds of pollutants: production puts relatively more pressure on air and water resources, and consumption creates more problems of solid waste disposal. But consumers do also endanger the air and water--individuals burn trash in their back gardens, and cities dump incompletely treated sewage into rivers. So, to some extent, consumption pollution poses an identical threat to the environment; and insofar as it poses a different threat, no interpretation of the ecology issue would consider it a less serious threat. Ill-considered solid waste disposal schemes, the open dump being perhaps the worst, are neither pleasant nor healthy.

Zoning is an attempt to secure the best of two worlds quite literally. In effect, zoning creates two very different worlds side by side, one pleasant, healthy and unpolluted for living and an adjacent one which is productive but ugly,

unhealthy and polluted. Such boundaries are untenable for natural, logical and human reasons. The conclusion is that, no matter what the threat to the environment is thought to be, it can be turned back only by a broad-based attack on the causes of pollution. Controlling the disamenities and health hazards resulting from environmental deterioration requires the same sort of antipollution campaign as is required if the issue is how to help mankind survive and conserve his natural resources. The balance of the discussion of environmental policy, therefore, focuses on methods of reducing pollution instead of simply containing it.

Before evaluating policy options for curtailing pollution, the goal itself must be examined carefully. It is important to note that the goal is not to stop all pollution. Putting the same point another way, the social optimum is a world in which some polluting still occurs. This is a result of the environment's capacity for self-cleansing, which has already been mentioned. This natural capacity is limited and quite sensitive to local concentrations and to the mix of pollutants, and scientists cannot specify with any precision a threshold beyond which the environment is incapable of assimilating more pollutants. Nevertheless, it is clear that such a threshold does exist and is quite important for the broad outlines of environmental policy. Ecologists have no argument whatsoever for curtailing pollution that makes no net impact on the environment. If nature will itself

remove the pollutants, then no damage is done to the environment or men living in it.³ (Some with sensitive noses and white linen hanging outside to dry might object to a smokey factory next door even if it does no harm to the natural environment, but this is the narrower sort of problem that zoning can solve.)

The reason men pollute is to cut costs, and from the social point of view it is positively undesirable to curtail cost-saving pollution that the environment would itself remove. Nature's self-cleansing mechanisms are natural resources which are continuously renewed, so it is wasteful to fail to take advantage of them. The goal of environmental protection policy, then, is to guarantee that: (1) the natural capacity for environmental self-renewal is fully utilized; (2) polluting beyond nature's capacity for assimilation reflects a balancing of social harms against gains; and (3) pollution is ceased where the social interest does not justify it.

The second category may be quite large or quite small, depending on one's conception of the ecology issue. Those who see the danger as the extinction of the species would insist that the social interest in curtailing pollution is so great that it can almost never be outweighed by other interests, but a man may be willing to risk the ugliness of oil-fouled beaches in exchange for a warm home in the winter. More important are the first and last points of the goal.

An appropriate environmental protection policy will require many polluting activities be curtailed but it will also permit some to continue.

In a discussion of environmental policy, it is also important to distinguish between tactics and strategy. On the level of tactics, scientific considerations of technical feasibility must prevail; on the strategic level, principled questions (who is to bear the costs, who is to reap the benefits) are involved. Freeman, Haveman and Kneese present what seems to be a logically exhaustive list of available tactics:⁴

- I. Reduce the output of pollutants by
 1. reducing the overall level of economic activity
 2. decreasing the pollutants required to produce a unit of GNP by
 - a. increasing technical efficiency of materials used
 - b. recovering and recycling wastes
 - c. shifting production to less pollution intensive products
- II. Treat residuals
- III. Pick carefully the time and place of release (eg., build a smokey factory in a windy area; pipe water-borne residuals downstream from large cities)
- IV. Increase the capacity of the environment to assimilate pollutants (eg., build a dam upstream to flush out a river during times of low flow; increase dissolved oxygen in a river)

For most of the component arguments of the ecology issue, one tactic is as appropriate as any other. (Only the resource depletion argument dictates a particular tactic--I.)

Which of these four tactics or which mixture of them is chosen ordinarily depends strictly on questions of which is the most efficient way to achieve the desired goal.

Technical considerations of efficiency dictate who must

actually pull the levers on the anti-pollution devices, but they certainly do not dictate how the costs of the device are to be borne. The local steel mill must have operational responsibility for the precipitator in the chimney, for example, but the device may have been installed at state expense. By and large, tactics do not dictate strategies for attaining the goal outlined above.

Three distinct kinds of strategies are available for controlling pollution. The first and least popular option is individual bargaining, the laissez faire option favored by few scholars other than that familiar whipping boy, Dr. Pangloss. A second option frequently urged by economists is use of the tax system to manipulate economic incentives facing a would-be polluter, making polluting more expensive or pollution abatement cheaper or both. The third set is really a bundle of legal options ranging from regulation-and-enforcement through a "bill of environmental rights."⁵

Rather fanciful logic supports the individual bargaining proposal. This laissez faire model suggests the present state of affairs is optimal, offering as evidence the simple fact that it is the present state. The core of the argument is that if pollution produces more damage than good then those harmed by it could afford to bribe polluters to stop. The fact that people have not done so indicates they cannot, that pollution gains outweigh its costs. From the point of view of society at large, then, the production of pollutants seems to be optimal.⁶ This can only be true, however, insofar

as all transaction costs (i.e., of acquiring information, of bargaining within and between groups of polluters and sufferers and of enforcing the agreement) are all zero. Since they usually are not, individual bargaining will not produce optimal results even in the short run. Even if all transaction costs are zero, individual bargaining is bound to produce non-optimal results in the long run as discussed in Chapter 5.⁷

A second possible method of controlling pollution is the economist's familiar suggestion, the manipulation of taxes or other direct economic incentives or disincentives. The basic logic of such solutions is that the incentives can be adjusted so as to make polluting prohibitively expensive or pollution abatement irresistably profitable. There are several variations on the logic of influencing would-be polluters through their pocketbooks.

The traditional Pigovian solution to problems of externalities attempts to force producers to internalize the externalities, to take them into account in production decisions. The mechanism is deceptively simple: first sum up all the costs of the externalities for those that suffer them; and second levy a tax in that amount against the producers of the external diseconomy. Since the tax the polluter bears equals the sum of others costs, the businessman produces the optimal solution for society by maximizing his own profits. If he can operate at a profit even after paying the tax (and

hence proceeds to produce), this can only be because the gains exceed the costs, both the internal ones reflected on his own balance sheet and external ones reflected in the tax. Similarly, if the tax would make it uneconomical to continue production, this would mean external costs his producing imposed on others exceeded his own gain from production; the social optimum again corresponds to his profit-maximizing choice, ceasing production.⁸

The most difficult step in this procedure is estimating the extent and value of external diseconomies. This is partially a difficulty of predicting the consequences of pollution, but more troublesome still is the matter of pricing the disagreeable side-effects. Some (such as the extra dry cleaning expenses of a family living near a smokey factory) are relatively easy to price, but others (such as ill health and shorter lives) are not easy to express as monetary sums. These less tangible costs cannot be ignored. Neither can they be conveniently fitted into cost-benefit calculations.⁹

Another more modest use of economic adjustments offers a more promising strategy. This uses economic adjustments only to induce reductions in pollution while using non-economic criteria for determining what levels of pollution are desirable. Independent standards are used to determine permissible pollution levels, and the magnitude of the taxes levied against polluters is judged only by its effectiveness

in enforcing those limits; taxes are to be precisely as high as necessary to keep pollution down to the specified limits. Pollution control is an especially appropriate application for such economic adjustments because of the relative ease of monitoring outputs. Given the desired levels, a pollution tax should be high enough to stop polluting exceeding these limits and low enough to encourage polluting up to them. One advantage of the economic adjustments approach is that the tax can be a floating one which is varied according to the differential environmental damage caused by discharging the same pollutants at a different time or place. The tax can be raised at times of high pollution (still air or low river flow) and reduced when the environment is more capable of absorbing wastes. Such a system has effectively governed operations along the heavily industrial Ruhr valley for several years. Economic adjustments are especially appropriate given the goal of pollution control: they effectively allocate the privilege of polluting up to the limits of the environment's capacity for self-cleansing; and by attaching a very substantial tax they could, in principle, also stop pollution entirely beyond that point.¹⁰

A third pollution control mechanism involving economic adjustments is the offering of positive economic inducements for pollution abatement. In practice such incentives are usually given in the form of tax credits, but they could as

well be direct cash payments. Positive inducements could, in principle, be used to achieve the same things as tax disincentives discussed above; just as taxes can make polluting exorbitantly expensive so too can bribes make abatement irresistably lucrative.¹¹ While positive economic inducements could be used instead of taxes, the tremendous cost of making so many substantial bribes to many would-be polluters makes it more reasonable to use positive and negative inducements together in a carrot-and-stick policy.

Such a mixed strategy has the advantage of being able to use bribes where they are most efficient. A pollution control policy depending on bribes alone must, above all else, reward forgoing opportunities to pollute. In a mixed strategy the tax might provide a sufficient disincentive to pollute, and bribes can be used to induce positive efforts of environmental protection. Mixed strategies typically offer, for example, tax credits to offset the costs of installing antipollution equipment. A residual charge provides the original impetus for industrialists to try to avoid polluting, and making abatement cheaper might therefore influence them; but without the tax (or a large bribe serving the same function) there is no reasons for a would-be polluter to refrain no matter how little it would cost.

Alternative legal structures constitute a third set of policy options for environmental protection. Among individual-oriented options are the traditional remedies

for pollution damages, nuisance (and related trespass) actions, and proposals for a new "environmental bill of rights." Legal strategies available to citizens collectively include the regulation-and-enforcement strategy and the proposal to treat the environment as a "public trust."¹²

The most familiar tort remedy for pollution-related damages is the nuisance remedy. A man who creates nuisances harming others must compensate them for past damages and cease further nuisance-producing activities. The nuisance doctrine is obviously a very general one, and it is not well suited to the peculiarities of pollution damages. Traditionally, to initiate a nuisance action a complainant must prove that another's actions uniquely damage him. Occasionally people can prove they are among a discrete group of sufferers from a particular factory's soot, but more typically a very large group of citizens suffers jointly from the combined wastes of several factories. An individual cannot usually prove which factory's smoke has soiled his linen, much less that he is uniquely affected. In response to such problems, the "public nuisance" doctrine has been devised making public officials responsible for suing for the cessation of activities creating nuisances for a large group of people. There is also much discussion of the concept of a "class action" suit whereby one individual can sue on behalf of an entire class of affected citizens to bring about the cessation of nuisances. A second difficulty in applying the

traditional nuisance remedy in pollution cases is that there is often a time-lag before pollution damages are manifested. It seems absurd to permit continuation of an activity certain to cause substantial harm eventually just because its effects will not be felt for several years. For example, breathing the sulphur dioxide emitted by a neighboring factor over a period of several years is certain to cause lung damage, but the traditional nuisance remedy offers an individual no relief until the damage has actually been done. This difficulty has been partially solved by courts' acceptance of scientific facts to establish the inevitable consequences of prolonged exposure to pollution; pollution per se is now considered a damage, and no further evidence need be offered of specific damage it has done in a particular case. Even with all these modifications, the nuisance doctrine is a relatively unsatisfactory response to pollution problems. It depends on one man (or a handful of men) suing on behalf of very many others to secure the public good of environmental quality. All too often everyone will attempt to be a "free rider", benefiting from others' suits without themselves taking the time and trouble to help. Since all are attempting to be free riders none will initiate the suit.¹³

The second individual-oriented legal strategy, the proposal to give every citizen the right to a clean, healthy and pleasant environment, differs radically in its form and impact. This might not mean that pollution would cease entirely, but it would mean that before anyone could pollute

the environment he must first secure the permission of all those who would be affected. In exchange for waiving their rights, people would presumably demand something they value more than an unpolluted environment. Ignoring transaction costs (a very large oversight), this might in theory produce the social optimum: anyone who pollutes must first adequately compensate his victims, and the fact that he can make a profit even after so doing shows that in this case the goods of polluting outweigh the evils.¹⁴ Considering transaction costs, however, the desirability of an environmental bill of rights is cast into serious doubt. It would make the prospective polluter pay the tremendous costs of bargaining with very many individuals. As a result, it blocks much socially optimal pollution and permits only the extremely profitable instances. Pollution is socially optimal if polluters could compensate their victims, but in some marginal cases polluters can just barely compensate victims. In these marginal cases it is optimal for pollution to occur, but the transaction costs will probably wipe out the prospective polluter's slight profits and thereby block the optimal path. Thus an environmental bill of rights will prevent much socially desirable pollution and permit only extremely profitable instances.¹⁵

Legal strategies available to citizens acting collectively include the most popular modern approach to pollution, the regulation-and-enforcement option. This strategy involves

the setting of pollution standards and enforcing them through a system of sanctions. The regulations might be imposed in a variety of ways, through the issuance of licenses, permits, or certificates of registration for polluting devices, by order of legislative, regulatory agencies or courts.¹⁶ Similarly, a variety of enforcement tools is available, with the sanction varying from a minimal fine to closure of the factory until standards are met. Even where the sanction is merely a fine, the enforcement of standards differs at two crucial points from the economic adjustments economists propose. First, taxes economists recommend are to be only as high as necessary to prompt polluters to cease in the appropriate numbers. Fines are typically punitive, not only forcing immediate halting of polluting but also punishing for past indiscretions. Second, sanctions suggest social disapproval of the activity. Taxes ordinarily imply no social judgement about the activity taxed--on the contrary, the Puritan ethic celebrates the making of profits, the ordinary basis for levying a tax.

The final legal strategy for environmental protection is to treat the environment as a public trust. The argument for taking such a view of the environment is three-fold: some resources are so important for the well-being of all individuals that it is unwise to allow private ownership of them; many of these resources flow from nature's bounty, not

individual enterprise; and function of government is to promote common interests instead of permitting such vitally important resources to be shifted from broad common uses to the promotion of private gain. The public trust doctrine has implications that fit very well with the proper goal of environmental protection policies. Generally, a trustee is responsible for the well-being of the legatee; he would be equally culpable for hoarding the corpus of the trust (i.e., refusing to invest it wisely) as for squandering it foolishly. Applied to environmental protection policy, the public trust doctrine would require full use of the environment's capacity to assimilate pollutants as well as prohibiting activities permanently impairing the environment. The public trust doctrine requires that environmental considerations at least be taken into account in making any decisions with ecological implications. All the public trust approach really offers, however, is a broad legal framework into which other aspects of environmental policy can be fitted. The trust doctrine does not itself suggest how much pollution would be permissible or how the prohibition of excess pollutants is to be enforced.¹⁷ .

12-2: The Fair Option

The Fairness Principle starts from a baseline in which no one's activities affect anyone else. Any movement from that baseline is fair if and only if adequate compensation is made to all those affected. Market mechanisms go some

way towards realizing this goal, but they often operate imperfectly. In the case of externalities such as pollution, the moral norm of Fairness picks out a relatively precise combination of policy options for environmental protection. Section 12-3 demonstrates that the fair policy is largely mirrored in U.S. practice.

Before discussing policy options, the Fairness of the goal of environmental protection must itself be examined. The nature of the ecology issue suggests a three-fold goal for environmental protection, and this goal conforms to the requirements of the Fairness Principle. The most important point is that neither Fairness nor the goal requires pollution to be curtailed beyond the point at which the environment's self-cleansing mechanism will remove pollutants naturally. Fairness only regulates gains and losses, and no one loses anything if the environment naturally disposes of pollutants. David Hume's comments about justice are equally applicable to Fairness: if there were an infinite supply of all things a man might want the concept would have no place in our moral vocabulary.¹⁸ Indeed, for centuries it seemed the environment had a practically infinite capacity to dispose of man's wastes and provide him with natural resources for no more than the price of digging them out of the ground. Ecology became an issue, as fairly it should, only when the limits were reached and pollutants began accumulating and fouling another man's environment.

The Fairness Principle directly bars a pair of related

strategies for environmental protection, the individual bargaining and individual right-holding options. Both are unfair because both guarantee that one of the parties will be grossly over-compensated at the expense of the other. The laissez faire individual bargaining model ensures that the polluter will be unduly rewarded. Since he is the one who imposes external costs on others at the outset, it is he who fairly should compensate them for their losses. Instead the individual bargaining strategy forces sufferers to actually pay him to stop polluting. Clearly, this is unfair.¹⁹ Conferring a right to a clean environment on all individuals, however, goes too far in the opposite direction. Giving everyone a right to an unpolluted environment gives everyone a virtual veto over polluting activities. A right-holder would have the whip hand in bargaining with would-be polluters, so he could demand a far higher price for waiving his right than would be necessary merely to compensate him for his losses. Suppose there were some choice industrial location where only one man would be affected by a factory's pollution. As the price for his permission for the factory to pollute, that one man could exact nearly all the profits that the factory owner would realize from polluting, even though his own loss is really much smaller.²⁰

The final obviously unfair option, incentives for polluters to cease, is open to the same objections as the individual bargaining model. Judgements of Fairness are made from the baseline situation in which no one's behavior

affects anyone else. Polluters have caused a movement from that situation to one wherein they impose costs on others, and those affected consequently have a claim in Fairness to compensation. The incentives approach to pollution control, however, would commit the tax monies of sufferers to the compensation of polluters to limit their discharges. The funds would flow opposite the direction required by Fairness.

Some other policy options must be dismissed on grounds of simple impracticality. The impracticality of a nuisance action at law is certainly sufficient to discredit that alternative. Similarly, the basic problem with the traditional Pigovian remedy for pollution externalities is the impracticality (bordering on impossibility) of estimating the total costs of an act of polluting, so there is no basis for determining the size of an appropriate tax levy to impose on that act of polluting.

In an effort to remedy the impracticality of the traditional Pigovian approach, some economists do make suggestions which would actually violate the Fairness Principle. One indicator of the costs of pollution might be how much affected individuals would be willing to pay to stop it, and some suggest this be used as the measure of costs to be fitted into Pigovian calculations. This proposal is plagued with serious practical difficulties because it will not be easy to get honest responses from people as to how much they would be willing to pay for such public goods.

Even if the tortuous procedures economists recommend to coax the truth from people really do work, the scheme is still open to criticism. It ties questions of optimal levels of antipollution efforts too much to the present distribution of incomes for comfort. Suppose a factory making £1 million from polluting in the neighborhood of a hundred millionaires has an equally profitable sister plant located in the neighborhood of a hundred factory workers. Equating the "social cost" of the pollution with the amount that sufferers would be willing to pay to stop it, the factory in the posh neighborhood would cost much more than the identical one in the working class area. Even if all the workers were willing to give up a much larger proportion of their income to stop the pollution they would not raise as much cash as millionaires, and the cash total is all that counts in this calculation. Thus, rich men can often stop pollution when the same number of equally offended poor men cannot. Clearly, this method of estimating the social cost of polluting sanctifies the present distribution of wealth.²¹

There would be no objection to this scheme from within the Fairness Principle if the present income levels were actually fair. If the present distribution of wealth were the one which would be produced had the society started from the hypothetical baseline and adequately compensated all those affected by deviations from it, then Fairness would not object to a scheme simply because it is sensitive to

present income levels in this way. Empirical observation, however, cautions that existing income differentials seem to be out of all proportion to any reasonable account of services rendered and sacrifices made. If the present income differentials are as grossly unfair as they seem to be, then a policy which would reflect them so directly must also be unfair. Even if the present distribution of wealth were fair there can be no guarantee that it will always be so in the future. Thus, it is wiser to seek an antipollution policy whose fairness does not turn on the fairness of the existing income distribution.

Having eliminated unfair and impractical policy options, several options remain and the fair environmental protection policy combines them all. As noted in the original presentation (Section 12-1), each of the remaining options does some things well and other things poorly. Each is best viewed as a partial strategy, and the most effective and fairest policy combines the public trust doctrine, economic adjustments, and regulation-and-enforcement.

The composite strategy must be essentially a legal policy, and, since it combines several component strategies, a broad legal framework within which to build the more specific requirements of anti-pollution policy is in order. The public trust doctrine is especially well-suited to this role. All it really does is impose a legal obligation to use the environment wisely. The public trust doctrine does

not treat the environment as sacrosanct, but it does require that potential environment damage always be considered before acting. In addition, the public trust doctrine is flexible precisely where the goal of environmental protection needs it to be, permitting some pollution while banning other.

Up to the environment's capacity to assimilate wastes, the problem is more one of allocating resources than of curtailing pollution. Indeed, the goal is to encourage maximal polluting within these limits. If the existing distribution of wealth is acceptable from within the Fairness Principle, then a residuals tax should be used as the most efficient way of allocating the resource. By selling "parcels" of polluting permission to the highest bidders, this strategy assures that the natural resource (assimilative capacity) is put to the most productive social use. This mechanism is especially effective in encouraging polluters to choose the best time and place to pollute, thereby take fullest advantage of the environment's assimilative capacity. Lower charges can be levied to encourage polluting during "off-peak" hours when few others pollute and the environment is better able to absorb the wastes. This strategy certainly has had this effect in the Ruhr valley pollution control project, and lowering the price of electricity during off-peak hours had led British householders to use storage heaters which take advantage of the lower night rates. Incidentally,

this mechanism will also be a very fair way of generating tax revenues. The natural resources that polluters use, air and water, are common property and it is only fair that everyone should benefit (in the form of tax relief or improved public services) from polluters' use of them. At any rate, it is a far less questionable method of raising revenue than most forms of taxation.

Insofar as the existing distribution of wealth is unacceptable from within the Fairness Principle, the results of competitive bidding for permission to pollute will not necessarily guarantee optimal usage of resources. In such cases, the allocation of polluting permits must be based on a broader analysis of social benefits than the "economic adjustments" strategy provides.

The final component of the legal strategy for pollution control is the regulation-and-enforcement option. This is most appropriate for controlling pollution over the limits of nature's capacity to assimilate pollutants. Ideally regulations would be designed to reflect these natural limits, leaving all below them to regulation by economic adjustments and everything above the limits to actual legal regulation with sanctions attaching to breaches. The sanction probably would be a fine, and at first glance such a regulation-and-enforcement policy might appear to differ little from one of economic adjustments. In fact, there is an important difference: taxing polluters implies no social disapproval

of their practices, whereas imposing a legal sanction (even a fine) on them does. The difference matters because people do react differently to those who simply have huge tax bills and those who are labelled as lawbreakers, scoundrels not to be trusted. The history of Ralph Nader's interests mirror what his speeches often make explicit: by building unsafe automobiles a company betrays callousness toward human life which is likely to be manifested in other actions such as making the air unfit to breathe.²² Legal regulations, therefore, will be the appropriate way to force an end to socially intolerable pollution.

The social choice of regulations will doubtless reflect the judgement that certain instances of polluting are inexorably linked to processes producing social goods more valuable than a clean environment. If all such processes, when taken together, produce more pollution than the environment can assimilate, then legal regulations must exempt such practices from the general ban on pollution above the environment's assimilative capacity. At the same time, regulations should force such polluters to research extensively methods of reducing the pollution necessary to their activities. Perhaps this special case is a fair application for the ordinarily unacceptable strategy of offering incentives to polluters.

12-3: U.S. Environmental Policy

The argument of Chapter 5 is that Rational Men seek to resolve coordination problems according to the dictates of the Fairness Principle. Chapter 10 shows that most individuals view environmental protection as a coordination problem so the Rational Man model predicts that most men will want the fair environmental protection policy discussed in Section 12-2 enacted into law. Given moderately responsive political institutions, this amounts to a prediction that the fair policy will be enacted into law. This section uses U.S. environmental policy to test this prediction. By and large, the prediction is confirmed.

The Rational Man model also has an **explanation** for departures from the fair policy. It analyzes those as the work of groups which profit greatly from polluting and have succeeded in controlling the policy decisions. A rigorous testing of this explanation would require a detailed study of the decision-making process leading up to each enactment which deviates from the expected, the fair environmental protection policy. Such a detailed study is clearly beyond the scope of the present inquiry. Instead of really testing the explanation, a short-cut is taken to see whether it might at least be plausible. Deviations from the fair policy are examined to see if they favor groups which are especially powerful and which reap especially

large profits from polluting. If they do, then it is at least plausible that these groups with the motive and capacity actually did control the decision process and produce the deviation from the fair policy. The success of such an argument lends only a little support to the Rational Man model, but its failure would have been truly damning to the Rational Man line of explanation.

12-3-a:Reflections of Fairness

The fair policy discussed in Section 12-2 has three components. It combines the public trust doctrine, the economic adjustment mechanism and the regulation-and-enforcement approach. All three of these policy components are, to some extent, already embodied in U.S. environmental protection law. Furthermore, U.S. law is moving in the direction of the fair policy.

The traditional U.S. approach to environmental protection has been regulation-and-enforcement.²³ The Water Pollution Act of 1956 was the first feeble attempt at regulation, although its primary aim is subsidizing construction of municipal sewage treatment plants (discussed in Section 12-3-b). The regulation aspect of the 1956 Act relies on voluntary compliance of polluters, which abatement conferences between federal officials and polluters are to encourage. Only one court case against a polluter has arisen under this Act, which amply demonstrates the failure of the

Act. Air pollution control attempts got off to a similarly slow start with the Clean Air Act of 1963. This Act primarily finances research and development but it also authorizes federal actions against inter-state air pollution. Again, these actions are to be undertaken only after lengthy hearings, and the Act's real impact has been minimal. Path-breaking regulation-and-enforcement regulation came with the Water Quality Act of 1965. This Act requires States to set their own standards of water quality, then to determine what levels of discharge from each polluter would be compatible with this overall pollution level, and finally to issue licenses to polluters allowing them to pollute up to that level. The 1965 Act authorizes federal enforcement actions when state-established standards are violated, and it also authorizes governors or state pollution control agencies to request the Director of the Environmental Protection Agency (EPA) to take federal action against inter-state polluters. Air pollution controls have followed a similar course, with the establishment of national standards for permissible automobile emissions in 1965 and the Air Quality Act of 1967. The 1967 Act directs the Department of Health, Education and Welfare (HEW): to delineate relevant air sheds; to develop and publish air quality criteria describing the effects of each pollutant on health, vegetation and physical materials; and to publish descriptions of available abatement techniques, their cost and their

effectiveness. The same Act requires states to establish air quality standards and implementation plans similar to water quality standards and plans required by the Water Quality Act of 1965. HEW was tardy in setting down air quality control regions and establishing the required criteria, so this policy was slow starting. The Clean Air Amendments of 1970 set deadlines both for HEW and for state officials to comply with the 1967 Act, and it requires that state officials submit their standards and implementation plans to federal officials for approval. The 1970 amendments also establish new national emission standards for all new stationary sources of air pollution. Thus, both in controlling water pollution and air pollution the regulation-and-enforcement strategy has been quite important.

One curious feature of this policy is the federal reliance on the states to establish criteria. There is a tendency, discussed in Chapter 10, for states to compete with one another for the most lenient antipollution laws to attract industries, which really is a feature of the Polluter's Dilemma. This irrational reliance on states will be considered in Section 12-3-b, but it is important to note that this reliance is now waning. The 1970 Clean Air Amendments require states' air quality standards to be approved by a federal official, the Director of the EPA; in the end, most states submitted no plans at all and left the matter entirely in the Director's hands.²⁴ Congress is increasingly relying

on direct federal standards, such as the national emission standards for autos and the national standards for emissions from new stationary sources. The Supreme Court has moved decisively to end inter-state competition resulting in overly lenient standards by, in effect, banning the inter-state movement of polluters; states may not let present air quality standards deteriorate, so any new polluter must limit his emissions levels consistent with present air quality in the area.²⁵

The second component of U.S. environmental policy, the use of economic adjustments to encourage polluters to refrain, is a recent innovation which is winning increasing acceptance. This is the primary technique being used to encourage automobile drivers to drive less often and drive smaller autos when they must drive. The EPA's moves to encourage rationing of gasoline, limitation of parking (or a surcharge on downtown parking), imposition of new tolls on bridges into Manhattan, etc., all involve economic adjustments of one sort or another to make driving more expensive and public transport (or car pools) comparatively enticing. A similar program of economic adjustments is being used in the state of Oregon to encourage recycling of glass containers. A 2 to 10 cent deposit on containers is refundable if the container is returned. President Nixon recently proposed a tax on sulphur oxides emissions from industrial installations. This would give polluters an

economic incentive to shift to other low-sulphur fuels and, in turn, would give refiners an incentive to remove sulphur from their fuels during refining.²⁶

The public trust doctrine is a relatively late-comer to U.S. environmental policy. The first step in this direction was taken by the federal government in the National Environmental Protection Act of 1969, which proclaimed the "responsibilities of each generation as trustee of the environment for succeeding generations." This Act establishes a policy of the Federal Government that the environment be protected and toward that end requires that all directors of federal projects which might endanger the environment first submit a report to the Council on Environmental Quality detailing the damage contemplated and discussing optional methods of operation considered. Individuals are empowered to sue public officials for failure to comply with the Act. Similar legislation has been enacted in several States, including Michigan and Connecticut.²⁷

The "energy crisis" has forced the U.S. to slow its progress toward environmental protection, but this is as the Rational Man model would predict. This simply reflects the societal decision that some things incompatible with environmental purity are, given the present arrangement of American society, more important than environmental protection. The Rational Man model predicts that in such a situation the pollution control regulations would be re-

laxed, and this is precisely what has happened.

12-3-b: Explaining Deviations²⁸

Surely the first deviation to be explained from the expected course of fairness involves the length of time required to enact these modest programs. It is understandable that these policies were not enacted before the danger to public health and safety, the dangers of resource depletion, etc., were known, and Fairness does not require antipollution policies at all until the dangers become apparent. The surprise is that it has taken the U.S. so long to act against the recognized evils of pollution. It has taken nearly two decades for the U.S. to move from the minimal voluntary self-policing policy of the Water Pollution Act of 1956 to a serious challenge to air and water pollution. This might be easily explained as the combination of two factors, the absence of antipollution technology and the opposition of industrialists to expensive programs. In this case, the first seems as persuasive as the second explanation. There was much foot-dragging among polluters to be sure, but the stumbling block was the state of pollution control technology. Legislators were willing to allow pollution to continue so long as their only option was bringing most of American industry to a grinding halt.

A second curiosity in U.S. environmental policy concerns the ill-advised reliance on the states to establish and enforce air and water quality standards. The logic of

polluting suggests that the States will probably establish as lenient a standard as possible in an attempt to lure industry there. Obviously, industrialists benefit from such cut-throat competition among states. The fact that states were given so much authority could probably be traced to the power guaranteed them by the U.S. Constitution.

A more important deviation from the fair policy concerns the offering of incentives for polluters to cease their activities. Such incentives might be fair if they are aimed at encouraging research and development into new ways to produce goods with less pollution, but this does not seem to be their purpose. Rather, they typically reimburse polluters for the costs of actual construction of antipollution devices. The main thrust of the Water Pollution Act of 1956 was to finance the construction of municipal sewage treatment plants, paying up to fifty-five percent of the cost of such facilities; similarly, the Tax Reform Act of 1969 allows industrialists a "rapid tax write-off" on new antipollution equipment installed on old factories. Again, these programs are probably due to the lobbying of powerful mayors and industrialists who benefit substantially from the schemes.²⁹

The movement to give individuals rights to a clean and healthy environment has not met with especially great success. Its one case of success, the Constitution of Illinois of 1970, can be attributed to the composition of

that populist Constitutional Convention. Delegates were largely middle-class lawyers with little interest in causing pollution (except, of course, by driving their autos) and a great deal of interest in making large industrial polluters either cease or pay for the privilege.

Finally, the fair policy would not include so indiscriminate a ban on pollution as is found in U.S. law. Prohibitions appropriate in heavily polluted areas are quite inappropriate in pollution-free areas. A certain amount of pollution (i.e., the amount that will naturally be removed) is positively desirable. Much of U.S. policy (especially the 1970 Clean Air Amendments and the EPA orders) mirrors the fair policy's distinction in this respect. There are, however, *two* enactments which particularly offend against *this* principle: the emissions standards for automobiles makes no distinctions according to the location the auto will be driven (the countryside can stand more auto pollution, while most cities probably cannot); and the recent Supreme Court decision "freezes" pollution levels, specifying present levels as the maximum permissible in every area of every state. To make these rules compatible with fairness environmentalists must argue that the environment's assimilative capacity has been passed in all areas of the U.S.; or, since scientists are uncertain of the precise boundaries of this capacity, they might argue the wisdom of erring on the side of caution. Still, it intuitively seems quite unlikely that Montana's air is so polluted it cannot clean

itself. Both these deviations from the fair policy can probably be explained as results of tactical judgements. There is no reason to limit emissions of autos that will be driven only in the countryside, but it is likely that legislators could not devise a way to keep autos registered in farm counties from being driven into large cities. To achieve the goal of tolerably clean city air, then, the emissions of the rural citizen's car must be limited as well. Similarly, it is likely that the Court decision was aimed at states which were relatively polluted but constraints of judicial craftsmanship forced them into the more general ruling.³⁰

NOTES

¹ Tibor Scitovsky, "Two Concepts of External Economics," Journal of Political Economy, 17 (1954), 143-51 dismisses the sort of externality exemplified by a factory's fumes with the back of his hand. He argues that such cases are "exceptional because most instances of it can be and usually are eliminated by zoning ordinances and industrial regulation concerned with public health and safety." His observations regarding the efficacy of such remedies seem questionable, but Scitovsky was certainly correct in his estimation of the popularity of the zoning remedy. For a fuller discussion of zoning see Otto A. Davis, "Economic Element in Municipal Zoning Decisions," Land Economics, 39 (1963), 375-86, and Pollack, Law and Contemporary Problems, 30 (1968), 331-54.

Ordinarily, zoning ordinances only govern land use. Any effect on pollution levels is indirect, although hardly incidental. Some states, however, have enacted pollution control statutes tying permissible pollution levels to land usage zones; thus, more emissions are allowed in an industrial zone than in commercial zones, and more are permitted in commercial zones than in residential and rural zones. George H. Hagevik, Decision-Making in Air Pollution Control (New York: Praeger, 1970) discusses one example of such a statute in New York State.

² Workers spend a large proportion of their time at their places of employment, and without significant changes these will remain manifestly unhealthy environments. See D.C. Murphy, Industrial Pollution: A Guide to Assessment and Control (London: Industrial and Commercial Techniques, Ltd., 1972).

The argument that workers can quit if they do not like the conditions of their employment, advanced in the decision of the U.S. Supreme Court in Lochner v. New York, 198 US 45 (1905) was reversed by Adkins v. Children's Hospital, 261 US 525 (1923) and has not been subsequently reembraced.

³ This is also the line drawn by A. Myrick Freeman III, Robert H. Haveman and Allen V. Kneese, The Economics of Environmental Policy (New York: Wiley, 1973), Chapter 2. These authors engage in a bit of rhetorical overkill in defining pollution in such a way that emissions which do no net harm to the environment are not considered to be pollutants.

⁴ Ibid.

⁵ Policy options are categorized in similar ways by Hagevik; and Freeman, Haveman and Kneese, Chapters 5 and 9. Ehrlich and Ehrlich, Population, Resources, Environment, 2nd edition, 363-73 offer a less enlightening discussion of policy options.

⁶ This is one application of a more general theorem owing to R.H. Coase, "The Problem of Social Cost," Journal of Law and Economics, 3 (1960), 1-44. It is most effectively argued with reference to environmental protection by Wilfred Beckerman, "Why We Need Economic Growth," Lloyds Bank Review, 102 (October 1971), 1-15 and "Economists, Scientists and Environmental Catastrophe," Oxford Economic Papers, 24 (1972), 327-44.

⁷ The individual bargaining model as applied to pollution control is effectively critiqued by E.J. Mishan, "Pangloss on Pollution," Swedish Journal of Economics, 73 (1971), 113-20 and The Costs of Economic Growth; Allen V. Kneese, "Environmental Pollution: Economics and Policy," American Economic Review (Papers and Proceedings), 61 (1971), 153-66; and Mancur Olson, Assessing and Improving the "Quality of Life" (forthcoming).

⁸ The traditional approach is A.C. Pigou, The Economics of Welfare, 4th edition (London: Macmillan, 1932), Part II, Chapter IX. Critical discussions of such an approach to environmental protection are offered by Peter Bohm, "Pollution, Purification and the Theory of External Effects," Swedish Journal of Economics, 72 (1970), 153-66; and Peter A. Victor, Economics of Pollution.

⁹ A.R. Prest, and Ralph Turvey, "Cost-Benefit Analysis: A Survey," Economic Journal, 75 (1965), 683-735 summarizes the method. Its limitations to problems of pollution control are discussed by Lester B. Lave, "Air Pollution Damage: Some Difficulties in Estimating the Value of Abatement," Environmental Quality Analysis, ed. Allen V. Kneese and Blair T. Bower (Baltimore: John Hopkins Press, 1972), 213-42; and, more generally, by Mancur Olson, Assessing and Improving the Quality of Life."

The cost-benefit analyst does have a way of pricing ill health and shortened lives. The price of ill health is simply lost wages plus doctor bills less insurance and governmental compensation payments; and the price of premature death is the projected earnings of the deceased over the balance of his normal life span less the "costs of living" for that additional period of time. The question is simply whether these measures do not underestimate the costs.

¹⁰ This use of economic adjustments is favored by A. Myrick Freeman III and Robert H. Haveman, "Residuals Charges for Pollution Control: A Policy Evaluation," Science, 177 (28 July 1972), 322-9; and by Kneese, "Environmental Pollution: Economics and Policy."

¹¹ See Freeman, Haveman and Kneese; Hagevik; and E. Mills, "Economic Incentives in Air Pollution Control," The Economics of Pollution, ed. Harold Wolozin (New York: Norton, 1966).

¹² Freeman, Haveman and Kneese, Chapter 9. See also Robert R. Lohrmann, "The Environmental Lawsuit: Traditional Doctrines and Evolving Theories to Control Pollution," Wayne Law Review, 16 (1970), 1085-1135; and James E. Krier, "The Pollution Problem and Legal Institutions: A Conceptual Overview," UCLA Law Review, 18 (1971), 429-77.

¹³ See especially Hagevik; C.C. Humpstone, "Pollution: Precedent and Prospect," Foreign Affairs, 50 (1972), 325-38; Paul Burrows, "Nuisance: The Law and Economics," Lloyds Bank Review, no.95 (January 1970), 35-46; and H. Kennedy, "Legal Aspects of Air Pollution Control," Public Health Reports, 79 (August 1964), 688.

¹⁴ See E.F. Roberts, "The Right to a Decent Environment," Cornell Law Review, 55 (1970), 674-706. In a world without transaction costs, polluting will be blocked if and only if would-be polluters could not afford to pay adequate compensation to rightholders for their losses from pollution that would result. On the Kaldor-Hicks Compensation Principle

criterion of optimality, then, rightholders would ensure, at least in theory, the proper production levels of pollution. Welfare economists are careful to distinguish questions of production and distribution. It is optimal to produce so long as gainers can compensate losers and have something left over, and distributive issues are entirely another matter. Usually this works to the advantage of producers, but it is interesting that in the case of environmental rights it is the rightholders that have such overwhelming bargaining power that they will be able to pocket nearly all the profits of polluting. The production level is still optimal, however, because they will actually block action only where polluting would not pay enough to compensate them.

15 These parallel moves economists typically make against the individual bargaining model discussed in note 7.

16 Hagevik offers an excellent analysis of the regulation-and-enforcement strategy. See also William J. Baumol and Wallace E. Oates, "The Use of Standards and Prices for Protection of the Environment," Swedish Journal of Economics, 73 (1971), 42-54.

17 Joseph L. Sax, "The Public Trust Doctrine in Natural Resource Law: Effective Intervention," Michigan Law Review, 68 (1970), 473; and Sax, Defending the Environment: A Strategy for Citizen Action (New York: Knopf, 1971).

18 David Hume, An Enquiry Concerning the Principles of Morals (London: Cadell, 1777), Section III.

19 Mishan, "Pangloss on Pollution" and The Costs of Economic Growth. His objections to the individual bargaining model also tell against the rights option. Mishan occasionally draws the connections himself, but he is obviously more interested in whipping Pangloss.

The importance of the baseline wherein no one affects anyone else for making judgements of Fairness should be noted. Simply saying that Fairness requires that externalities be eliminated would provide no guidance without this baseline; true, polluters impose external diseconomies on others, but to force them to cease polluting is to impose an external diseconomy on them. Only the baseline allows us to say which externality is permissible and which is intolerable. Brian Barry, Political Argument (London: Routledge and Kegan Paul, 1965), 258-9 discusses a similar problem in connection with Buchanan and Tullock, Calculus of Consent.

20 Barry, Political Argument, 245-9, discusses the possibility of an offensive veto in his critique of Buchanan and Tullock.

21 A seminal article by Paul A. Samuelson, "The Pure Theory of Public Expenditure," Review of Economics and Statistics, 36 (1954), 387-9, exposes serious difficulties in estimating demand for public goods. If an individual is asked how much of a public good he desires and is assured that his statement will not be used as a basis on which to charge him for that good, he will demand more of the good than he would have purchased had the good been a private good; he will enjoy the full benefit but pay only part of the cost. If he is asked how much of the public good he desires and is told that his statement will be used as a basis for charging him, he will demand less than he would have purchased had the good been a private good; his understatement will reduce his tax bill and result in only a marginal decrease in the quantity of the public good provided. See Richard A. Musgrave and Alan T. Peacock (eds.), Classics in the Theory of Public Finance (London: Macmillan, 1958); Albert Breton, "A Theory of the Demand for Public Goods," Canadian Journal of Economics and Political Science, 32 (1966), 455-67; and Peter Bohm, "An Approach to the Problem of Estimating Demand for Public Goods," Swedish Journal of Economics, 73 (1971), 55-66, who suggests trying to trick voters into revealing true preferences by so confusing the issue that they will vote honestly in exasperation. The connections between income distribution and such approaches to determining resource allocation are noted by Mishan, The Costs of Economic Growth, 73-81 and Victor, 34.

22 See Section 4-2 on the importance of reputation and trust in social relations.

23 See the excellent discussion in Freeman, Haveman and Kneese, Chapters 6 and 7; and Noel de Nevers, "Enforcing the Clean Air Act of 1970," Scientific American, 228 (June 1973), 14-21.

24 Time, 25 June 1973, 40-1.

25 Ibid., 41. The Court's decision is itself offensive to the Fairness Principle, as is discussed in Section 12-3-b.

26 See Freeman, Haveman and Kneese for a discussion of the sulphur oxides tax; Time, 25 June 1973, 40-1 for EPA's moves; and Time, 9 April 1973, 47, for Oregon's container law.

27 National Environmental Policy Act of 1969, PL 91-190, 91st Congress S1 075; quotation from Title I, Sec. 101, b,1. See Freeman, Haveman and Kneese for discussion of the Michigan and Connecticut laws.

28 For details of resistance to antipollution statutes, see case studies in Hagevik; and Crenson, The Unpolitics of Air Pollution.

29 From the standpoint of the Fairness Principle, the incentives were compensating the wrong people, the polluters. But it is important to note that the arguments of Congressmen for enacting such compensation measures sounded very much like they were attempting to invoke the Fairness Principle: "In effect private industry is being asked to make an investment which in part is for the benefit of the general public. Moreover, it also has been established that existing factories which attempt to curb pollution efficiently through the addition of antipollution equipment may face significant increases in capital costs. Moreover, expenditures for pollution control equipment generally do not result in any increase in the profitability of a plant." Hence, the tax subsidy, in the form of a rapid tax write-off, was justified. Senate Report (Finance Committee) on the Tax Reform Act of 1969 (PL 91-172), U.S. Code, Congressional and Administrative News, 91st Congress, 1st session (1969), 2284-8 at 2284.

30 While neither Justices nor lawmakers saw any real alternatives to their choices, that certainly does not mean there were none. The Justices committed the worst oversight: for years they have accepted differential treatment of different areas with different problems, and there is no reason they could not have made some distinction between polluted areas with lax emission standards and unpolluted areas with similar regulations. Among neglected legislative options is the Smog Tax, suggested two decades ago by RAND economists as a means of forcing urban dwellers to curtail auto emissions. The first step in applying this remedy is periodically to test cars and assign them smog ratings according to their emissions; this rating would be indicated by a seal on the windscreen. Whenever the driver of the auto purchases gasoline, he would have to pay a tax, the size of which depends on his smog rating. Urban gasoline stations would charge a much higher tax for the same smog ratings than rural stations, and therefore a man who would spend most of his time driving in the city would take several measures to reduce his smog tax: purchase a car which produces less smog, put a smog-control device on his old car, keep his engine well-tuned so it emits fewer pollutants, or drive less miles a year. See Freeman, Haveman and Kneese, 132-5; D.M. Fort, et al., "Proposals for a Smog Tax," reprinted in U.S. House Ways and Means Committee, Hearings--Tax Recommendations of the President, 91st Congress, 2nd session, September 1970, 369-79; and New Jersey Department of Environmental Protection, Bureau of Air Pollution Control, "Motor Vehicle Tune-up at

Idle," and "Notice of Public Hearings," May 27 1971, for studies of the effectiveness of such proposals. It is plausible that Congressmen were unaware of these proposals when considering the Clean Air Amendments of 1970--the RAND paper's first appearance in Congressional documents comes as an appendix to hearings conducted in September 1970, after the Amendments had already been enacted.

CHAPTER 13: THE INTERNATIONAL SCHISM

The Spaceship Earth analogy emphasizes the interconnectedness of natural relationships throughout the world and in so doing suggests the importance of environmental protection on an international scale. Although development of the issue has been slow, the international politics of ecology has been attracting increasing attention both from scholars and Governments. The international political aspect of the ecology issue provides yet another opportunity to test propositions generated by the Rational Man model of environmental politics. Insofar as nation-states can be analyzed as unitary actors resembling Rational Men, the logic of polluting developed in Chapter 10 should apply to nations as well as to individuals. Nations, like individuals, are rich and poor, so some of the propositions of Chapter 11 about "anti-ecologists" should also hold at the international level. And some of the comments of Chapter 12 should hold true for international as well as national environmental protection policies.

For the sake of brevity, this analysis takes Rational Governments as the basic unit for analysis of international political events. That is, it presupposes (1) that international political events are the outcomes of actions by Governments of nation-states and (2) that those Governments choose actions so as to maximize attainment of a well-ordered set of preferences for goals as described in Chapter 2. This

is certainly not the only way of approaching international politics from a Rational Man perspective; and, in general, it is probably not the best way. At the least, it has the virtue of familiarity, being little more than a formalization of the "classical" model of international politics, which holds that the behavior of a nation is dictated by its National Interest. In certain circumstances, the Rational Government model is a fairly satisfactory approximation, and environmental protection seems to be one of those cases. The differences between nations far surpass the differences within nations over the range of variables governing attitudes toward environmental policy, so it is probably safe to ignore the effects of domestic politics on the Government's position on international environmental protection issues.¹

13-1: The Rationale for International Action

As applied to individuals, the logic of polluting suggests that Rational Men pollute because they can thereby pass off some of their production costs onto others. The reason that a Rational Man prefers a universal ban on polluting to universal polluting is that others also pass off some of their production costs on him in the form of pollution; and his gain from imposing external costs on them is outweighed by his loss from their imposing external costs on him. At the individual level, then, it is the existence of

such externalities that makes pollution abatement a coordination problem. Were the costs associated with pollution entirely internalized, it would not pose a coordination problem at all.

So long as it seemed that all costs of pollution were payable within the nation of origin, pollution control was seen to be a purely domestic affair posing no coordination problem for the international community. If all the costs were actually internalized, a Government neither has any motive for permitting excessive pollution nor does it have any reason to seek to curtail polluting activities in other jurisdictions. International protection of the environment becomes necessary only when externalities are involved, and international efforts in that direction commenced only when it was realized that domestic pollution threatens the quality of the global environment.

The argument for international environmental protection does not depend on any particular version of the ecology issue. While it is ordinarily phrased as if the issue were human survival or resource depletion, the health or amenity argument could just as well be used to justify international action. The validity of the argument depends only on the truth of the claim that one nation's pollutants flow into another country (eg., on air or water currents), and that these foreign pollutants cause some undesirably consequences in the second country.² Suppose, for example, that ocean

currents carry mercury from Japanese factories into Chinese waters and this contaminates fish which the Chinese catch and eat. China obviously has a motive for seeking at least bilateral international agreements to limit mercury emissions from Japanese factories, and this motive exists so long as the health of any Chinese fishermen is endangered. Somewhat paradoxically, this motive might actually be weakened if mercury is becoming so concentrated in the global environment that the survival of all mankind¹ is threatened; then each Government whose nationals suffer from mercury poisoning would be inclined to wait for some other nation to enter into a bilateral agreement reducing the Japanese emissions.

This argument suggests numerous occasions for international action to protect the ecology. Every river flowing through two or more countries is a potential candidate for international control commissions. Air currents disperse pollutants even more widely. As a general principle, the global ecology is probably so interconnected that virtually any environmental damage of noticeable proportions in one place will soon become the subject of international concern. As George Kennan writes, "The entire ecology of the planet is not arranged in national compartments; and whoever interferes seriously with it anywhere is doing something that is almost invariably of serious concern to the international community."³

13-2: Rich Ecologists, Poor Developers

Like the domestic population, the international community is composed of rich members and poor ones. The analysis of Chapter 11 concerning the comparative reactions of rich and poor citizens to the ecology issue also applies to the comparative reactions of rich and poor nations. Poor men, when behaving rationally, seem less concerned about environmental deterioration than rich ones. The reason is that the poor have more pressing problems and the threat of an eco-catastrophe is relatively far in the future compared to these other problems. A rich citizen faces few of the poor man's more urgent problems, and the threat of the impending environmental crisis is one of the more pressing matters on his political agenda. The same logic suggests that rich nations will seem comparatively more concerned with environmental deterioration than poor ones.

Representatives of impoverished countries typically deploy these very arguments against international environmental protection measures. The most urgent problems of poor societies include hunger, housing, sanitation and the like; in comparison, protection of the environment is not a very pressing concern. (These representatives often score debating points by claiming that these problems are also "environmental" issues, but only confusion is gained by this use of the term.) Developing countries are especially sensitive to the danger that advanced countries will apply

their own environmental quality standards in evaluating the seriousness of ecological damage that a development project would cause. The developing nations freely admit their willingness to tolerate higher levels of pollution-generation.⁴

To the extent some pollution is inherent in the process of economic development, it is rational for poor countries actually to desire environmental deterioration. All of their more pressing problems catalogued above are in one way or another products of poverty, and the realities of international politics are such that economic development is the only way that nations can erase widespread poverty.⁵ Certainly some development plans are more pollution-intensive than others, and there is no fixed ratio of pollutants that must be produced per unit of increase in GNP. Still, increased economic development means increased industrialization and that necessarily means some increase in pollution. Since industrialized countries face fewer of the problems of nationwide poverty, there is less need for them to industrialize further as the only feasible means of solving the problems accompanying widespread poverty; such poverty as exists in the U.S., for instance, could in principle be remedied by transfer payments from the wealthy to the impoverished without pushing the wealthy below the poverty line themselves. This redistribution might be politically unrealistic, but it would be equally unrealistic to assume that profits from

additional growth in the U.S. economy would trickle down to those below the poverty line. The pockets of persistent poverty in the U.S. demonstrate rather limited but nonetheless insurmountable barriers to the "trickling down" of wealth.

Poor nations can be observed responding to the international ecology issue in a rational way. Their expressed aim is economic development, and they recognize that a certain amount of pollution will be necessary in order to achieve that goal. Underdeveloped countries were particularly vocal in regards to planning for the 1972 United Nations Conference on Human Environment. Their position, developed by their representatives meeting at Founex, Switzerland in 1971 under the auspices of a Panel of Experts on Development and Environment, was that the truly serious problems facing poor nations can only be solved by development which necessarily entails pollution. Thus, they urged the Conference to take account of their peculiar needs to pollute when drafting general guidelines.⁶

Rationality postulates explain the attitudes of Governments as well as citizens on environmental protection policy. Rich nations rationally desire to protect the environment, while poor ones generally oppose such goals. This split in international opinion determines the shape of international political efforts at environmental protection. Two quite distinct patterns of interaction must be analyzed. Rich

nations have organized among themselves an informal "rich man's club" for pollution abatement. This "club" attempts to persuade recalcitrant poorer nations to cooperate, but the success of the venture in no way turns on their cooperation.

13-3: The "Rich Man's Club"

One non-polluting nation, like one tidy man, among a group of many polluters makes little difference to the overall quality of the environment. There is little reason for a nation to refrain unilaterally from polluting unless there is some reason to believe that others will respond to its initiative. Some measure of coordination is required to curb international pollution, and nations that appreciate the seriousness of the environmental crisis will be anxious to devise appropriate coordination mechanisms.

The rich nations of the world regularly vocalize their appreciation of the seriousness of the environmental crisis, and they have begun cooperating, both formally and informally, to deal with it. Many international conventions touch on ecological issues: Convention for the Prevention of Pollution of the Sea by Oil (1954, amended 1962); Convention on the High Seas (1958); Convention on the Continental Shelf (1958); Brussels Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (1969); Convention on Civil Liability for Oil Pollution Damage (1969); and the Draft Convention on the Control of Marine Pollution by Dumping from Ships and Aircrafts. In addition to these formal measures,

there is increasing informal cooperation among developed countries in this regard. The 1972 U.N. Conference on Human Environment stimulated many intergovernmental discussions of the problem of pollution control, and it resulted in the creation of a new office within the U.N. Secretariat concerned with international environmental problems. Similar environmental programs exist within the Organization for Economic Cooperation and Development and within the North Atlantic Treaty Organization. Perhaps more important is the 1970 move by the International Council of Scientific Unions creating within itself the Scientific Committee on Problems of the Environment (SCOPE), which is staffed by scientists drawn from various nations but representing no Governments.⁷

It is clear that developed countries are moving in the direction proposed by George Kennan in his 1970 Foreign Affairs article, "To Prevent a World Wasteland." He suggests that developed nations form a "rich man's club" for protection of the international environment, and that this agency be composed of scientific experts from many nations but representing no governments. This agency would (1) gather information, (2) coordinate research and antipollution efforts, (3) set standards and encourage compliance without using actual sanctions, and (4) guide international action to protect the high seas, space and the polar caps. The agency is to be created by leading industrial and maritime nations, according to Kennan's proposal, and membership will be ex-

plicitly limited to those nations.

The logic of polluting makes clear the reasons that developed nations at first resist a proposal such as Kennan makes. Just as no single nation would unilaterally refrain from polluting, so too would everyone wish that all polluters refrain if he does. But the facts of international pollution also make it clear why the developed nations have gradually come to accept Kennan's proposal. If all rich nations could agree among themselves to limit pollution, then the international environment would be significantly cleaner; after all, as Kennan points out, "it is they whose economies produce the pollution problem." Very little in terms of the global environment is lost by allowing the poor nations to continue to pollute. Their pollutants are a small proportion of the world wide total, and the net impact of the global environment is even less since less damage is done by releasing the same pollutant in a relatively clean sector of the environment than in a more polluted one.⁸

Kennan is also correct in supposing that no international government will be necessary to enforce the directives of the "rich man's club." The club will be sufficiently small (ten members under Kennan's proposal) for the conditional promise of the mutual adjustment process to work as a sufficient deterrent to defections from the coordinating scheme. Should any one nation violate the agreement and pollute beyond the set standard, other nations would probably discover

the defection and consider the agreement voided. The result is the universal polluting which all rich nations have found to be mutually disastrous .⁹

13-4: Controlling the Polluting Developers

The incompatibility of development and environmental protection is real enough. Development is inherently a dirty process. There are ways to reduce the ecological damage produced within the developing nation, but there is no way to eliminate it altogether. Ecologists, especially those fearful of extinction of the human species or depletion of natural resources, understand this contradiction and occasionally follow where their argument leads--to the suggestion that underdeveloped countries should remain in that state for the sake of the environment. Even for these ecologists, however, this is not a very compelling argument. Environmental pollution or resource use attributable to activities of poor countries is miniscule in comparison to that of rich nations; and, considering the relatively unpolluted atmosphere over Kenya and the natural environment's capacity for assimilating a certain amount of wastes, poor nations would cause less damage per unit of pollution than rich nations. The only way the argument that nations must refrain from developing for the sake of the environment makes any sense at all is on grounds of practicality: it is easier to deny a Peruvian Indian something he has never had than to

take something from an American which he already enjoys, even if it is his fourth automobile.¹⁰

Protesting against such proposals, representatives of poor nations do point to their meagre contribution to global pollution, but more often they cast their argument in terms of distributive unfairness. The standard of fairness at work in these international political disputes is easily recognizable as a variant of the Fairness Principle of Chapter 5. Governments of underdeveloped nations argue that they have never been adequately compensated for the sacrifice of their natural resources to colonial empires. They analyze the present distribution of wealth between nations as a direct reflection of this past unfairness. For the Fairness Principle to be satisfied in light of this history, there must be a redistribution of wealth, compensation paid by wealthy nations for past exploitation of undeveloped countries. Against this background, the suggestion that poor nations help save the global environment by not developing is, in their eyes, patently unfair. Fairness dictates that they become richer relative to the wealthy nations, and this proposal would either maintain the present gaps or actually widen them.¹¹

Developing necessarily entails polluting the environment. While there are always ecological objections to development, some development plans are more pollution-intensive than

others and ecologists would prefer some such plans as the lesser of evils. Occasionally the environmentally-responsible plan is also the most profitable one (eg., it is sometimes profitable to sell wastes collected by antipollution devices) and in such instances a rational egoist (Rational Man or Rational Government) would behave as ecologists wish he would. More often, however, protecting the environment means the diversion of resources that would otherwise be committed to more rapid development. The poor do not especially mind the environmental deterioration accompanying development. They would not voluntarily commit their own resources to environmental protection at the expense of development, and they urge rich nations offering foreign assistance not to divert aid that would ordinarily go to support development to environmental protection efforts instead. In making this plea, they are behaving perfectly rationally. But if anyone is to pay for costs of environmental protection, the Fairness Principle clearly directs that the rich nations must be the ones to pay. They are the ones who benefit from and want the scheme, and it is only fair that they be the ones to bear its costs. Governments of poor nations wish their wealthy benefactors had not attached such wasteful riders to their grants, but if the offer of assistance promises more good (development) than costs (environmental protection) on balance they will accept the offer.¹²

If wealthy nations are concerned to protect the global

environment by reducing the pollution of underdeveloped nations, then conditional offers of development assistance are a very effective means of achieving this goal. This is simply an international extension of the strategy (discussed in Chapter 12) of using economic adjustments to control domestic pollution.

The capacity of the natural environment to assimilate pollutants figures very heavily in the discussion of an appropriate (fair) domestic environmental control policy. There is no reason to control emissions that the environment can itself remove without harm, and the amount of damage a pollutant does to the environment depends on where it enters. The same amount of pollutants entering the already overburdened environment of an industrialized sector (a city or nation) causes much more harm than if it enters at an unpolluted point (an unindustrialized city or nation). The fact of underdevelopment, therefore, gives poor nations a natural advantage over rich ones: they have not used up the assimilative capacity of their natural environments. The Japanese Keidanren (Chamber of Commerce) counsels businessmen, "There is a physical limit for [Japan] in pursuing the past pattern of economic growth. Many industries are destined to seek sites for their factories in foreign countries with more elbow room from an environmental standpoint. Environmental capacity is far larger in some countries, and the self-purifying process of air and water will make it

easier to solve environmental impacts of industrial expansion in such countries."¹³ Japanese industries especially are taking this advice and exporting pollution.

Given this natural fact, it is clear that Governments of rich nations which are concerned about international pollution would be well advised to spend their resources cleaning their own domestic environments instead of bribing nations to refrain from polluting. The global environment is more seriously damaged by every increment of pollution in an industrialized place than a similar increment entering at an unindustrialized place. The size of the new United Nations World Fund for the Environment agreed at the 1972 U.N. Conference on Human Environment (a worldwide effort involving \$100 million over a five-year period) only needs be compared with the annual U.S. expenditure on Federal aid to municipalities for the purpose of constructing sewage treatment plants (\$1 billion annually) to demonstrate that rich nations are rationally committing a very large fraction of their environmental protection resources to domestic efforts.

NOTES

¹ For a more complete discussion, see Graham T. Allison, The Essence of Decision (Boston: Little Brown, 1971). In general, it is probably more profitable to focus on the agencies composing a Government as the Rational Actors, but in some cases (eg., where all are interested in the same thing happening) this yields the same results as positing Rational Governments.

² Miguel A. Ozorio de Almeida, "The Confrontation Between Problems of Development and Environment," International Conciliation, 586 (1972), 37-56 provides a useful list of cross-national pollutants.

Another type of international spill-over relating to pollution control schemes concerns international trade. These issues, which are ignored here, are discussed in General Agreement on Tariffs and Trade, "Industrial Pollution Control and International Trade," Development and Environment (Paris: Mouton, 1972), 201-25; William J. Baumol, Environmental Protection, International Spillovers and Trade (Stockholm: Almquist and Wicksell, 1971); and Ralph C. D'Arge and Allen V. Kneese, "Environmental Quality and International Trade," International Organization, 26 (1972), 419-65.

³ George F. Kennan, "To Prevent a World Wasteland: A Proposal," Foreign Affairs, 48 (1970), 401-13.

⁴ See "Report of the Panel of Experts on Development and Environment," published in Development and Environment (Paris: Mouton, 1972) and International Conciliation, 586 (1972), 7-36. See also Ozorio; and Joao Augusto de Araujo Castro, "Environment and Development: The Case of the Less-Developed Countries," International Organization, 26 (1972), 401-16

⁵ The allusion to "international political realities" refers to this: if rich nations were really concerned about the pollution of poor countries they could offer to make transfer payments to erase poverty in undeveloped nations and thus preclude the need to develop, but this is rather an unlikely action. Abraham Chayes, "Post-Stockholm: Influencing National Environmental Law and Practice through International Law and Policy," Proceedings of the American Society of International Law, 66 (1972), 1-14 criticizes the "refusal to address the problems of redistribution and distributive justice that are implicit in a policy of limiting growth." (p.4)

⁶ Founex Report.

⁷ See L.K. Caldwell, Environment: A Challenge to Modern Society; Barbara Ward and René Dubos, Only One Earth; John Lawrence Hargrove (ed.), Law, Institutions and the Global Environment (Dobbs Ferry, New York: Oceana Publications, 1972); and a special issue of International Organization (vol. 26, no. 2, Spring 1972), 169-478.

⁸ Kennan; see also Ozorio.

⁹ While agreeing that there is no need for an international body to enforce environmental protection standards, Paolo Contini and Peter H. Sand, "Methods to Expediate Environmental Protection," American Journal of International Law, 66 (1972), 37-59 emphasize the advantages of avoiding specifying standards in international treaties; instead they suggest that treaties simply empower a certain group to promulgate standards which will then have the force of international law.

¹⁰ Ozorio quotes one such comment.

¹¹ See Ward and Dubos; Ehrlich and Ehrlich, Population, Resources, Environment; and the Founex Report.

¹² Ways in which development can be less pollution-intensive are carefully catalogued in Raymond F. Dansmann, John P. Milton and Peter H. Freeman, Ecological Principles for Economic Development (New York: Wiley, 1973). The Founex Report pleads with developed nations not to divert resources to environmental protection but adds that, if they are going to impose environmental quality standards on development programs they fund, they should increase their aid accordingly.

¹³ Keidanren, Environmental Pollution and Japanese Industry as quoted by Robert Whyman, "Sharing the Pollution Burden" The Guardian, 22 June 1973, p.4. Similar suggestions are to be found in the Founex Report and Ozorio.

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