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Timothy O'Riordan

POLICY MAKING AND ENVIRONMENTAL MANAGEMENT: SOME THOUGHTS ON PROCESSES AND RESEARCH ISSUES

TIMOTHY O'RIORDAN*

Policy making has been defined as "the process of transformation which turns political inputs into political outputs."[1] It is the mechanism through which society's collective demands are monitored by the political system for conversion into action. As envisioned here, the role of policy making is not so much the resolution of particular decisions as it is the creation of a "decision environment"—a set of rules, roles and procedures which guide behavior and shape expectations—in which a variety of connected or related decisions can be made. This decision environment is probably a crucial concept but its definition and comprehension remain elusive. Students of decision making[2] are increasingly unhappy about visualizing decisions as discrete, observable steps in some sort of rational, incremental process. It appears more realistic to think of decision-making as a series of gradually narrowing choices in which participants at any one step, either knowingly or unwittingly, restrict the options available at the next.[3]

One purpose of this paper is to look at the factors which mould this decision environment, in an attempt to analyze its influence in the area of environmental management. The result of this examination indicates that certain functions of the decision environment can be put to good use when searching for improved mechanisms for policy making. The second part of this paper investigates areas of interest for future research and suggests certain modifications of

*Reader in the School of Environmental Sciences at the University of East Anglia, Norwich, England.

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1. E. Schoettle, *The State of the Art in Policy Studies* in The Study of Policy Formation 149 (R. Bauer & J. K. Gergen eds., 1964).

2. The general arguments are reviewed in F. Castles, D. Murray & D. Potter, Decisions, Organizations and Society 285-292 (1971) [hereinafter cited as Castles], but a detailed discussion can be found in F. Brown, *The Administrative Process in Britain: Decisions* in Decisions, Organizations and Society 86-102 (1971).

3. To quote Castles, *supra* note 2, at 291. For those who attempt to discover the bias of a decision making system by looking at the decision makers themselves, a real problem is raised by looking at the exact point at which a decision is reached. The procedures of decision making may be such as to create a filtration process in which the identification of the time and place of the decisional choice becomes virtually impossible.

existing policy making structures that might be worthy of careful experimentation.

THE DECISION ENVIRONMENT

A decision environment can be established only under certain conditions. One is that society is willing to give its *support* to a polity which is thereby granted the authority to allocate power and determine social values. Another condition is that of *legitimization,* for, in order to exert power and execute decisions, the political system must regularly solicit support and reaffirmation of the validity of its measures. Elections, referenda, public hearings, commissions of inquiry, the employment of independent consultants, and requests for "public response" are all examples of legitimizing mechanisms.[4] Furthermore, those who enact policy require legitimizing tools, which have come to attain an almost mystical aura. Planners display plans, public health officials pronounce safe minimum standards, engineers design computerized simulation models with built-in conservative safeguards, economists employ cost benefit analyses and administrators delight in planning, programming and budgeting systems.

Implied by these two conditions is a third—that of *political consensus.* Many investigators have stressed the notion of consensus, for it is vital for the smooth functioning of complex human organizations. Dahl[5] visualizes consensus as "a recurring process of interaction" among members of the political stratum and the non-political population, an interaction based upon a shared acceptance of roles and rules of procedure. While objectives may not be widely agreed upon, mechanisms through which objectives can be attained are generally accepted by all actors, including the general public. In other words, in order for the policy making process to function effectively, all those who participate in it must agree to certain basic rules and accept a structure of role specialization. This is necessary to sanction leadership and to permit policy implementation. Organizations of all kinds flourish because their members have faith that they work; consequently, an adaptive, responsive, and reasonably well functioning political process tends to be stable and enduring.

Political consensus can be distinguished on three levels in policy making—between the electorate and their political representatives, between interest group members (including the political caucus) and

4. An excellent analysis of the symbolism of political legitimizing tactics can be found in M. Edelman, The Symbolic Use of Power (1964).

5. R. Dahl, Who Governs 315-24 (1961).

their delegated leaders, and between agency personnel and their executive heads. At each of these levels we shall see how the existence of consensus serves to sanction power, establish rules, develop specialized roles and, generally, to permit a complex socio-political process to function. We shall also discover just how little monitoring need take place to enable leaders to act and their constiuents to support.

The Electorate and Their Political Representatives

Almond and Verba[6] emphasize that in stable democracies the maintenance of elite power is perpetuated by a sense of trust on the part of the public which believes that since the body politic is part of the same political community, the self-interest of elites will be the same as the collective social interest. However, when it comes to social questions (such as environmental issues) there is little evidence that this is true. To begin with, it seems that many people do not hold well formed opinions in social matters,[7] implying that they are not in a position or simply not willing to inform themselves of social problems (such as environmental degradation) which do not have a direct bearing on their everyday lives, or that they are content to leave the resolution of these questions to their political leaders. If the latter speculation is correct (and certainly this is often assumed) then their faith may not be well founded. A recent Gallup poll[8] found that 55% of Americans displayed profound cynicism and alienation toward their political leadership, while both Miller and Stokes[9] and Luttberg[10] have demonstrated the gulf that lies between the

6. G. Almond & S. Verba, The Civic Culture (1963).

7. P. Converse, *The Nature of Belief Systems in Mass Publics* in Ideology and Discontent (D. Apter ed. 1964), shows that while a majority of the public (60-70%) seemed to have some knowledge of a number of social issues, few (about 20%) were able to express an informed opinion, and fewer still (about 5%) were able to comment on the precise nature of government policy and performance respecting specific questions.

8. The special Gallup poll was commissioned by the Senate Subcommittee on Intergovernmental Relations and published in their report entitled Confidence and Concern. Citizens View American Government (1973). The poll found that while only 35% of the interviewed sample felt that the quality of life had improved, and 45% felt it had deteriorated (5% had no opinion and 5% did not respond), 65-70% of elected officials believed that the quality of life had improved. Generally, the poll found that the discrepancy between the views of the electorate and political figures became more marked at the state and local levels, and that elected officials generally were far more sanguine about governmental performance than were the sampled citizens. In the absence of any direct monitoring mechanism and in view of the demonstrable lack of articulation of public concern over matters of collective interest this discrepancy might not seem surprising. But it is hardly conducive to wise political action.

9. Miller & Stokes, *Constituency Influence in Congress* 57 Amer. Pol. Sci. Rev. 45 (1963).

10. Luttberg, *The Structure of Public Beliefs on State Policies: a Comparison with Local and National Findings,* 37 Pub. Opinion Q. 104 (1971).

opinions of the electorate, as imagined by their political representatives, and opinions as surveyed through interviews.

The evidence is revealing but not very illuminating. It appears that policy making at the political level takes place with only weakly established links between the public and their elected representatives. For a variety of reasons—because they don't really care, because they feel there are some individuals supporting their case, because they have no faith in the political process, and possibly because they imagine that they cannot change political events even if they really put their mind to it—the majority of people are willing to let matters of public importance be handled by a relatively small number of active participants, who periodically must seek support to maintain their favored position. Almond and Verba[11] conclude that this apparently widespread passivity is necessary to permit the political elites to act authoritatively, but that elite authority is always tempered by the threat of mobilized public action. Thus, consensus is maintained through the balance between passivity and potential participatory action.

This kind of consensus arrangement can have interesting implications for environmental quality issues, the solutions to which may directly affect special interests but in determining which there is clearly mobilized public support. Crenson[12] developed Bachrach and Baratz's[13] notion of *non-decision making* in an analysis of why air pollution control efforts were delayed in two communities near Chicago. Crenson found that powerful coalitions actually impeded efforts to upgrade air quality simply by preventing the air pollution problem from reaching the political agenda. Even though there was a recognizable public interest over the matter of air pollution, it was so weakly advocated that the "public regarding ethos" of the political leaders was not actuated sufficiently to overcome their "private regarding ethos." Where problems pose solutions which challenge the dominant values and rules of political consensus, substantial power may be directed simply at keeping this challenge out of the political arena. Non-decisions may thus be the result of a politically enforced neglect which may be sanctioned over a considerable period of time. The deliberate suppression of emission control devices by the big

11. Almond & Verba, *supra* note 6, at 346-47.

12. M. Crenson, The Un-Politics of Air Pollution (1972). Crenson derived much of his theme from a statement by Schnattschneider. All forms of political organization have a bias in favor of the exploitation of some kinds of conflict and the suppression of others because organization is the mobilization of bias. Some issues are organized into politics while others are organized out! (emphasis in original). *See* E. Schnattschneider, The Semisovereign Peoples (1960).

13. Bachrach & Baratz, *Two Faces of Power*, 56 Am. Pol. Sci. Rev. 947 (1962).

automobile makers in the fifties and the unwillingness of the A.E.C. to make public the controversy over reactor design safeguards in the early seventies[14] are just two examples of non-decision making with respect to environmental matters where a clear public interest was involved. At this level of policy making, then, one influence of the decision environment may be to determine just what is included or excluded from political agendas. Despite the demonstrable weaknesses in the linkage between the electorate and their political representatives, political consensus maintains the necessary support, legitimization, and authority to permit this to happen. In this connection the legally sanctioned entry of well-informed and well-mobilized public interest groups is tremendously important, but how well these groups can penetrate the decision environment that leads to non-decision making is difficult to determine, and clearly will vary from one situation to another.

Specialized Interests and Their Leadership

Crenson's analysis indicates that specialized interest groups can mobilize biases to impede political discussion of certain issues and to maintain an existing decision environment. Pressure groups are embedded in the political fabric and seek to influence policy in the direction of their own interests. In addition they often act as useful sources of information for the policy maker and, albeit very imperfectly, as indicators of the public temper.

But interest groups are mobilized by their own kind of consensus which promotes their common purpose, generates support for their strategies and establishes clearly defined roles.[15] One outcome of this is that the leadership of such groups can enter the policy making arena confident of the support of their membership. In the case of large and well organized groups (trade unions, chambers of commerce, trade associations, professional associations, etc.) leaders enjoy considerable power but are regularly subjected to scrutiny by their membership. So, while their influence is considerable, pressure group leaders must constantly monitor the views of their supporters. Such groups are powerful partly because they are mobilized to achieve the simple objective of protecting their collective self interest, partly because they are well anchored within the political

14. The whole story of the AEC controversy can be seen in five articles by Gillette, Nuclear Reactor Safety, 176 Science 492; 177 Science 867, 970, 1080; and 178 Science 482. For a wider perspective *see* R. Lewis, The Nuclear Power Rebellion (1972).

15. A useful conceptual analysis of the role and function of interest groups can be found in G. Wooton, Interest Groups (1970).

system, and partly because the policy makers whose opinions they wish to influence are easily targeted.

But those powerful groups are rarely influential in determining the collective public interest.[16] Problems afflicting society as a whole never become the prerogative of any particular group, thus pressure group behavior fails in the discovery and expression of the common good. Indeed, as was noted above, the activities of such groups may actually impede the identification of environmental problems and certainly inhibit any survey of initial solutions.

The implication of the discussion so far is that policy making is conducted among a relatively few influential people, who are not required to know specifically the nature of their client's interests, but whose power is sanctioned by periodic scrutiny and well established procedures to legitimize their authority. But within this broad consensus the political culture is divided by a number of competing demands for different favorable outcomes, simply because elites and their supporters do not share similar objectives. The result is that policy making becomes dominated by a process of negotiation, bargaining, concession trading, and compromise hinted at by Schoettle in her definition and more explicitly formulated by a number of writers including Wengert[17] and Dror.[18] Bargaining behavior is expedited if the representatives meet face-to-face knowing that they enjoy the trust and support of their constituents and are mutually perceived as enjoying that support. Bargaining is a process requiring specialized talents so it should be stressed that interest group leaders exert influence in relatively well defined areas of policy.

This general observation is of particular significance in environmental policy making where highly specialized technical information may be concentrated in the hands of interests whose activities are the subject of regulation by environmental protection agencies. For example, most of the research technology and expertise relating to the control of automobile emissions and the development of alternative forms of motive power lies in the hands of the manufacturers themselves. This makes it extremely difficult for regulatory agencies to question their evidence or to produce contrary, but equally expert, testimony. As a result, regulatory agencies are sometimes forced to invoke sanctions other than those of countervailing expert evidence, such as police powers or the withholding of tax concessions

16. This point is well developed by Olson, who argues that any public purpose served by interest groups is largely a by product of their primary concern—the protection of their own self interest. M. Olson, The Logic of Collective Action 5-16, 132-37 (1965).

17. N. Wengert, Natural Resources and the Political Struggle (1955).

18. Y. Dror, Public Policymaking Re-examined (1968).

or public funds, and at times they may appeal to the general public for the necessary support so that they can bargain with political strength, if not always with technical expertise. Thus pollution control becomes a political-technical bargaining process amongst key individuals.[19]

We can categorize the role of key individuals and groups in policy making along the dimensions of *resources* and *power.* Resources refer to the level of information, to expertise, and to the organizational ability to transmit this information effectively. Power is a function of the use of resources to influence decisions in desired directions. The two are closely related but the latter has a more political connotation, since it relates to perceived bargaining strength and to future bargaining behavior.

Many environmental action groups, however, do not enjoy the same internal cohesion as the well established lobbies because their members are seldom bound by lasting ties and their leaders may be inexperienced in the art of political bargaining. One exception to this is the issue-oriented action group organized to protect a well defined collective self-interest, such as a community group blocking a high rise development in a highway proposal, or a residents' organization fighting the extension of an airport runway. In such instances group cohesion is strong, the strategies of group leaders are demonstrably supported, and an effective consensus is mobilized. But in the case of many ideologically-oriented environmentalist groups such solidarity is lacking.

Nevertheless, many people feel that some form of citizen initiated protest through active groups is a necessary means to achieve environmental goals.[20] For environmental action groups to succeed, it seems that they will have to adopt the organizational structure, command of information, and leadership responsiveness of the well established lobbies. In addition they will probably have to choose issues where there is a clearly defined community of interest or where they can demonstrate that they can obtain strong membership and public support. These policies appear to be adopted by the major U.S. environmental action groups, such as the Environmental Defense Fund, and the Friends of the Earth. Thus, in a curious way,

19. This point is part of the findings of Crenson, *supra* note 13, but it is more explicitly developed by M. Holden, Pollution Control as a Bargaining Process (1966) and by Chevalier & Cartwright, *Towards An Action Framework for the Control of Pollution* in National Conference on Pollution and Our Environment (1966).

20. Senate Subcommittee on Intergovernmental Affairs, *supra* note 8, at 94. In the Gallup Poll cited earlier, 75% of the sampled population were members of one kind of social group or another (though only 10% could be defined as active), but 49% felt that citizens groups were becoming increasingly effective in policy making.

pressure groups tend to resemble the very organizations they are designed to fight.

Just as there is demonstrable weakness in the monitoring connection between the electorate and their political leaders, particularly with regard to questions involving social choice, so there appears to be a similar rupture in the linkage between group membership and their leaders for the large majority of small scale, ideologically motivated citizen action groups. This has implications in the decision environment because policy makers view the effectiveness of such groups in terms of the legitimacy of the information they produce and the values they hold.

Consensus Within Executive Agencies

A third area of consensus is found within policy forming and executing agencies. For these institutions to function effectively it is necessary that their members agree to the executive mandates of the organization, to its operating rules, and to well-defined and mutually accepted roles. These commonly held orientations help to insulate agency officials from "non-agency" viewpoints and encourage them to seek support for their actions through the operating ethos of the agency involved.[21] Under these cirumstances agencies seek the views of internal or external experts who, in part, play a role of "uncertainty absorbers" by filtering complicated and possibly conflicting evidence into a comprehensive format.

As information passes upwards through the agency hierarchy, it tends to become more simple, more structured and more certain. This is most noticeable in situations where the agency is not cohesive, with senior officials regarded as holding different views from the junior staff and where the need to condense complex information is very great.[22] Hence it is possible for an organization to become committed to policies that may have originated from marginal individuals armed with biased interpretations of selected evidence.

Nevertheless, such a situation can occur precisely because policy formulating organizations operate on the basis of shared values and group cohesiveness, factors which play a vital role in establishing a

21. A. Downs, Inside Bureaucracy 226-28 (1967) has shown that the need for internal consensus maintenance is particularly strong where agency operations are complex, controversial or in competition with other agency directives. F. Brown, *supra* note 2, stresses the fact that where decisions involve complexity and ambiguity–factors that inevitably threaten the authority of an agency–the desire for legitimized facts is particularly strong.

22. This point is stressed in Downs, *supra* note 22, at 116-18, and is illustrated by Sax, who reported how President Nixon was given a highly biased summary of all the arguments in favor of the SST, with only a few contrary arguments, before making his decision to continue with the controversial project. *See* J. Sax, Defending the Environment 84 (1970).

framework for communication, legitimizing activity, and providing a suitable rationale for pursuing any chosen course of action. One effect of this is that intra-agency criticism tends to be stifled: the maverick either conforms, voluntarily seeks resignation, or is ousted.[23] The outcome of all this is that information flows within bureaucracies and tends to be carefully monitored to reinforce consensus.

Thus the decision environment in the bureaucracy is composed, in part of forces which seek to maintain organizational consensus, to narrow agency perspectives, and to simplify information flows. Related to this are pressures which encourage agency personnel to follow routine procedures, and to fall back on variants of familiar answers even when faced with somewhat novel situations. The resource management literature is replete with examples of special-mission agencies who adopt narrow terms of reference and seek only well tested solutions.[24] Given the powerful consensus-maintaining forces mentioned above, it is perfectly comprehensible why routine procedures are followed, at least initially, and also why agency reform does not provide a satisfactory answer. Unless the reform explicitly incorporates a non-routine questioning and analyzing function, consensus-maintaining forces will tend to restrict the options under review.

The Policy Making Process

Policy making is basically a political process in the sense that it is concerned with legitimizing social action via the trading of preferences for certain kinds of desired outcomes. It is a process that relies upon a substantial degree of implied consensus among participants because, for any given set of decisions, relatively few actors are involved. It is a process of bargaining and compromise based upon some form of concession trading which, in turn, is propelled by tensions that bridge conflict and conformity. Conflict produces stress which must be resolved through the search for information, the articulation of preferences, and the trading of gains and losses; conformity legitimizes this behavior, directs motivations and entrenches prejudices.

Thus policy making is a behavioral process which is influenced by the values, aspirations, motivations and beliefs of key actors and by

23. This point is well illustrated by Nader. *See* Nader, *The Scientist and His Indentured Professional Societies,* 56 Bull. Atomic Sci. 43.

24. *See, e.g.,* NAS-NRC Committee on Water, Alternatives in Water Management (1964) and Water and Choice in the Colorado Basin (1966). *See also* A. Maass, Muddy Waters (1951); C. Reich, Bureaucracy and the Forests (1966), and G. White, Strategies in American Water Management (1969).

the social setting in which they function. The forces in operation can be divided into three interacting sets, namely: the personality characteristics of the key actors; the influences of the social, political and/or institutional environment in which they work; and the nature of the issues over which social choices must be made (Figure 1).[25] It should be emphasized that these sets of forces not only interact but shift over time. It will be seen that all of this poses almost intractible problems for the analyst, for key actors are often difficult to identify; they vary from issue to issue, their values and belief systems will undoubtedly change, and the setting in which they enact their functions will present varying influences from time to time, setting to setting and issue to issue. With this in mind it is easy to see the challenge facing potential researchers in this field.

Personality, opinion formulation and political behavior interact

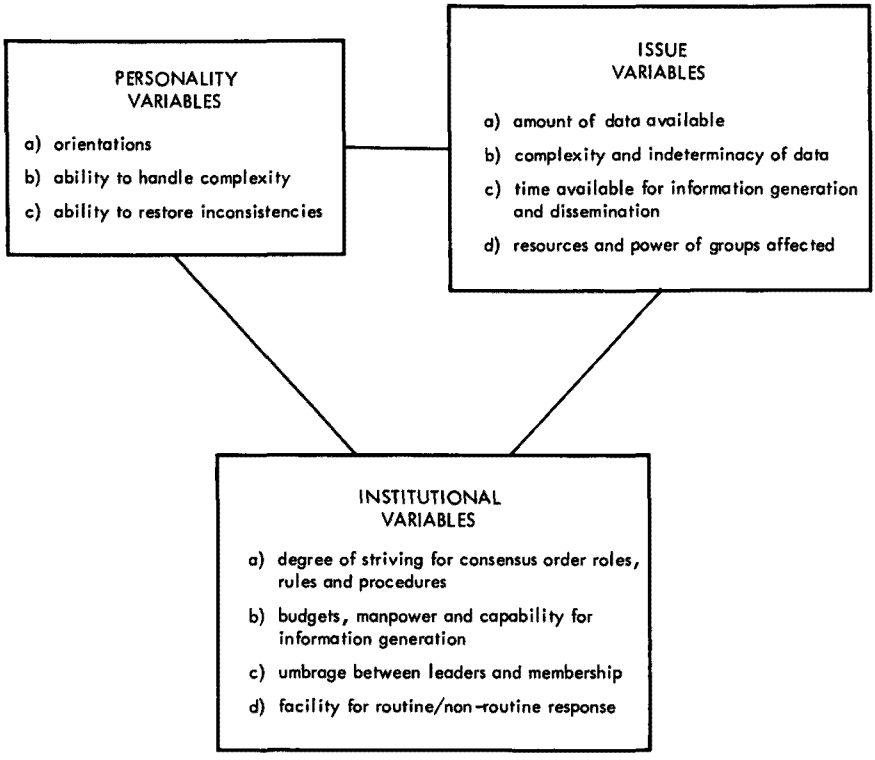

FIGURE 1

25. This diagram and discussion is helped by two sources. One is White, *The Formation and Role of Public Attitudes* in Environmental Quality in a Growing Economy 105 (H. Jarrett ed., 1966), and the other is Craik, *An Ecological Perspective in Environmental Decision Making*, 1 Human Ecol. 69.

through the meshing of three levels of orientation, namely: the *cognitive* (relating to knowledge and beliefs); the *affective* (relating to feelings of like or dislike); and the *evaluative* (relating to judgments of goals and modes of action) with regard to oneself, to other actors, to the political setting and to the various roles and rules encountered in the resolution of an issue. Thus it is clear that the very perspective which defines the nature of the problem may be colored by these orientations to such an extent that there may not be any agreement among participants as to what constitutes the problem, let alone how it can be remedied.[26] Where the issues are enormously complicated and where information is either not available or indeterminate, as is often the case with environmental questions, problem identification can become a very contentious issue.

The orientations outlined above are influenced by personal experience, exposure to information and general knowledge. What seems to be important here is the ability to handle complex information and incorporate new evidence into a coherent and logical model, for this permits familiarity in conceptualization and an openness to novel solutions.[27] Unfortunately, an ability to integrate complexity may expose the actor to recognizable inconsistencies of viewpoint, or discrepancies between belief and a chosen course of action, either within himself or between himself and his colleagues. So, coupled with an ability to cope with complexity and indeterminacy should be a facility for recognizing and reconciling inconsistencies, attributes that are not commonly found.

Where the issue under review takes the form of a demonstrable threat to society, or exposes a major public controversy, or introduces a number of dimensions which challenge normal operating assumptions (the implied consensus discussed above), there is usually some crisis resonse which forces non-routine perspectives into the policy making arena. Environmental issues often demand such a response because they are associated with many non-routine attributes. The introduction of multiple goals reflecting differing ideologies; the difficulty of obtaining all the relevant information, given limitations in time, budgets, manpower and technical capability; the problem of identifying and incorporating external effects within the decision making apparatus; and the question of limiting the three

26. This is probably a more important problem than is generally realized. Decision environments create forces which narrow problem definition along preselected notions, but because the decision environments for different groups of participants differ, so will problem identification vary.

27. This ability is known as integrative complexity and is discussed briefly by White, *supra* note 27, at 123 and more extensively by M. Barker, The Structure and Content of Environmental Cognitions (1972).

branches of government—the legislative, the executive and the judicial—to harmonize the necessary inter-relationships between four levels of decision-making—the legislative, executive, regulatory and adjudicatory—demand a non-routine response in policy making and if all four are combined the strains on the existing policy making apparatus are considerable.

Figure 2 summarizes four kinds of decision flows that function within the process of policy making. It may be argued that many decisions take place in response to political stress, activated by a variety of interest groups and mobilized public opinion. While this may frequently be the case, decision flows may be set in motion, in some instances, simply because certain key individuals feel that appropriate action should be undertaken. Strategic military decisions are of this type, as are actions taken to safeguard public health. Where demonstrable pressure is brought to bear upon policy makers, a chain of decisional events may be set in motion which leads to *non-decisions;* deliberate suppression of political debate or merely the symbolic use of power. Standards may be established but never enforced, or a commission of inquiry established which never publicly reports in full.[28] Another linkage leads to *routine agency decisions*—such as the construction or extension of a sewage treat-

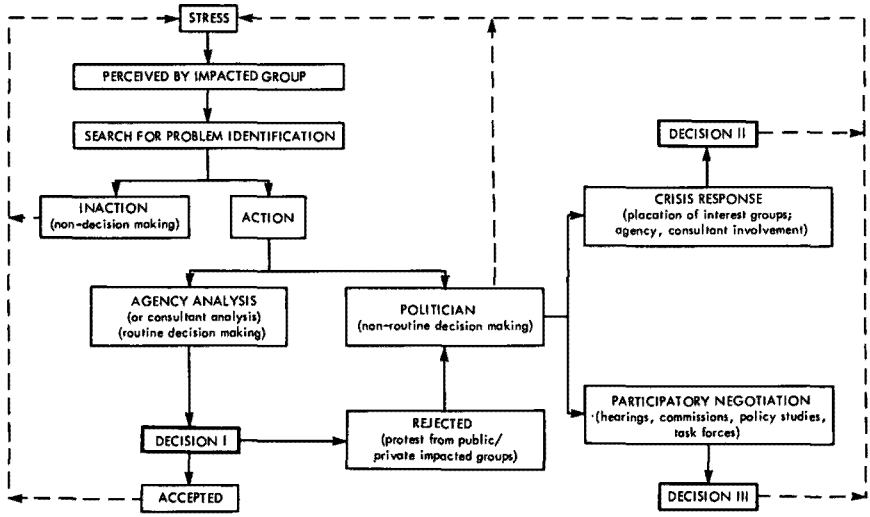

FIGURE 2

28. The whole issue of the pseudo legitimacy of various current participatory mechanisms is well described by Riedel. *See* Riedel, *Citizen Participation: Myths and Realities,* 32 Pub. Admin. Rev. 211.

ment plant, seeding of clouds to stimulate rain, or other similar actions.

As noted above, if the issue is unprecedented, or very complicated, or if a variety of public and/or special interest pressure groups become involved, or if the proposed agency decision is likely to produce adverse effects upon particular individuals or groups, then *non-routine decisions* will be made. These invariably result in more extensive investigation and usually require some form of participation by politicians. Depending upon the nature of the issue and the impact and political weight of affected individuals and groups the strategic decision may take the form of a *crisis response* where some direct concessions are made to placate adversely affected interests. However, where the issue is very wide ranging and particularly difficult to solve, a process of *participatory negotiation* will be invoked, with a more deliberate effort made to incorporate public opinion. Since policy making should be a learning process, in all cases there should be some form of evaluation to monitor performance (identified in the Figure 2 as dashed lines).

RESEARCH AREAS OF INTEREST

Environmental issues, in particular, challenge the deficiencies in the existing policy making process, but there are many advantages inherent in the present system which should be borne in mind when seeking reform. These include: the striving for consensus; the roles of key actors in influencing opinion and transmitting information; and the function of the bargaining process. Key areas which appear to require further investigation in environmental policy making relate to: information flows; the assessment of public preferences; and the introduction of more formal participatory mechanisms.

Information Generation, Processing and Transmission

Policy making institutions are enormously dependent upon the generation of information, the faithful transmission of that information amongst actors, and the use to which information is put in the analysis of predicted outcomes of possible alternative courses of action. Evidence presented earlier indicates that various decision environments tend to select and distort information and that this is particularly noticeable when issues are confusing, when data is unavailable or indeterminate, and when policy making institutions are uncertain of their responsibilities.

It will probably never be possible to identify and weigh the effects of this distortion, but certainly an attempt to do so should be made,

by carefully monitored case studies of a variety of issues. These studies should seek to ascertain what information is being generated by what actors and/or institutions, the fidelity with which it is transmitted, and how it is being interpreted and used. Such an analysis would be useful in appraising the capability of the political system to manage information flows, and should provide a partial clue to the values and orientations of key actors and the institutions with which they are associated.

It is conceded that any direct monitoring of these orientations (for example, by means of interviews), while of crucial importance, will be virtually impossible to undertake because the accuracy of response by participants with vested interests will always be questionable. Probably a number of complementary research procedures will have to be employed including, possibly, direct participation in the process itself, though certainly a careful scrutiny of all published information should provide a helpful initial perspective. A further difficulty here is the assessment of orientations that inevitably shift over time and as the decision environment changes. Again there is no simple solution to this dilemma except a research design that explicitly bears this problem in mind.

The Assessment of Public Preferences

Environmental choices must be made in the context of public preferences for certain outcomes. One problem here is the lack of an adequate research mechanism for measuring such preferences. Preferences imply a relationship or an odering of priorities, where to prefer one thing means giving up a little of something else; this is a hard enough thing to do for personal matters, but becomes almost impossible when collective public choices must be made. The standard interviewing instrument (the questionnaire) is largely unsatisfactory for this purpose as it assumes that opinions are well formed and that the nature of the tradeoffs required is clearly understood.

In any case the individual does not learn and transmit experience in isolation. The evidence is now convincing that face-to-face contact is a most influential means of shaping opinion and ordering preferences.[29] If an individual is to judge whether a proposed course of action is good or bad, it may be helpful to develop a research strategy based upon problem solving groups which combine the advantages of employing key actors on the one hand and the meshing

29. For a good summary of the literature relating to this point, *see* D. Bem, Beliefs, Attitudes and Human Affairs (1970).

of alternative perspectives on the other.[30] The use of problem solving groups is well established in the concept of the expert task force, and has been further developed by social psychologists as a mechanism among non-experts.[31]

Appropriate Institutional Arrangements for Facilitating Public Choice

The problem of resolving legitimate but conflicting objectives requires a closer look at the mechanisms for making social choice. Recent attempts to incorporate explicitly a multiple objective weighting mechanism into project evaluation[32] have done little more than point out the imperfections of the present political process which is not well suited for this purpose.

A major issue here is that of the level and scale of representation, for political scientists appear to be divided on the merits of a general purpose versus specialized representation, covering small or large areas. One proposal advocated by Haefele[33] is for a regional form of government where policy is prepared by a number of generalist legislators who understand the preference hierarchies of their electorate, and who are responsible for ordering priorities and resolving conflicts. This model assumes a high degree of accurate political communication between the electorate and their elected representatives and a heuristic form of preference formation and ordering through legislative debate. On the other hand, Self[34] advocates a system of smaller, specialized, functional councils operating within a broadly elected body, and dealing with matters of technical complexity. These more specialized councils would be based upon smaller con-

30. In a thoughtful paper on the subject Thayer concludes:
> The fundamental unit of organizational activity and analysis, so it seems now, will be a collegial, non-hierarchical face-to-face problem solving group large enough to include the perspectives and expertise necessary to deal with the problem at hand, but small enough to assure each participant that his or her contribution is substantial, meaningful and indispensable to the process.

See F. Thayer, Participation and Liberal Democratic Government 4 (1972).

31. *See* W. Gordon, Synectics (1961) and G. Prince, The Practice of Creativity (1970). But the advantages of this technique for ascertaining citizen response to various environmental choices, especially where conflicting but legitimate objectives are involved, is as yet little researched. Possibly some careful experimentation will be necessary before meaningful results are produced and certainly the matter of choosing appropriate members of such task forces will be of great importance.

32. The first practical example of this was by Hill, *A Goals Achievement Matrix*, 34 Jour. Amer. Institute of Planners 19, but the idea has subsequently been incorporated into the work of the Federal Water Resources Commission and the U.S. Army Corps of Engineers.

33. E. Haefele, Representative Government and Environmental Management (1974).

34. Self, *Elected Representatives and Management in Local Government: Alternative Analyses*, 49 Pub. Admin. 269.

stituencies so that communication between the citizen and his elected representative would be facilitated. Self is in effect advocating a specialized decision making task force which would report to regional councils whose job it would be to weigh outcomes and formulate policy.

A variation of these proposals advocated here incorporates the notion of citizen task forces, formed on an area wide, functional basis and acting initially as specialist-advisory bodies to policy makers. Individuals who are opinion influentials within the social structure could be chosen to form the core of such groups, the purpose of which would be to clarify policy proposals and act as a useful communications link between the public and professional advisors. Widespread citizen participation is neither feasible nor functional, but middle level specialist citizens' "representatives" could form the necessary mechanism whereby differing social values are incorporated into policy making.

While the task forces might begin as primary order specialist groups with particular expertise and interests, it is desirable that these would overlap into higher order (secondary) multiple interest task forces composed of representatives of the specialist task forces and senior policy officials. The advantage of this mechanism is that it would bring together disparate but common interests at a face-to-face group problem solving level, and appear to be most suitable for the participatory negotiation form of decision making outlined in Figure 2.

Motivation to participate will be tremendously influenced by the credibility of the task force members in the eyes of the agency officials, the elected representatives, and the general public. Graham[35] emphasizes that this kind of arrangement is of mutual advantage as citizen opposition becomes more effectively mobilized (partly due to favorable changes in environmental law in North America) and as policy makers realize that the only way to resolve ideological and value-laden conflicts is to confront the various protagonists on a face-to-face basis. Until now senior policy makers have been unwilling to share their decision making responsibilities, but the development of legally sanctioned citizen participation and the peculiarly complex nature of many environmental issues may well stimulate an interest in more innovative participatory institutional mechanisms.

Neither the primary task forces nor the integrated task forces would be political decision making bodies, for political decisions properly should remain with formally elected representatives.

35. J. Graham, *Reflections on a Planning Failure*, Plan.

Rather, these are problem analyzing groups explicitly incorporating disparate and conflicting interests. Indeed there is evidence that opinions are most likely to be changed in social settings when "outsiders" (individuals who are respected but who provide a different perspective and who help to create tensions among existing value systems) help to point up inconsistencies and to show the consequences of certain courses of action.[36]

The task force notion could be fitted into both the Haefele and Self models. But it is not a panacea, for if it is to function effectively, its members must be truly representative and accountable to constituent groups; otherwise the existing inadequacies between client groups and their leaders would merely be replicated. Also it is important to dispel any temptation on the part of task force members to assume unauthorized political authority. One solution is to devise a careful monitoring mechanism which ensures that task force members regularly meet with their client groups; another possibility is to devise a by-passing procedure whereby concerned citizens can communicate directly with key policy makers. But ideally, if the task forces were held in public esteem, if policy makers and their professional advisers really believed in their worth and participated with them, then membership of these groups might be regarded as a privilege. The resulting struggle to join a group could be resolved through balloting, or other forms of legitimizing support, and possibly members should be paid for their services—a procedure which should encourage them to be more responsive.

A related issue here is the question of adequate compensation for disaffected groups. As is well known, public choice involves external effects that are rarely incorporated directly into the decision making process and in which disaffected publics are improperly compensated. The problem here stems from inadequate information and unequal political power and representation. When there is a real public outcry in such circumstances, policy makers may respond to the crisis situation simply by "buying off" or "bribing" the disaffected groups, as outlined in Figure 2. Wolpert and his colleagues[37] have worked on this problem intensively and have developed models

36. The inverse point is made by Brown, *supra* note 2, at 92. "If most members of the group share certain attitudes, these are reinforced by 'resonance' and are difficult to dislodge. A group that has been successful in the past is particularly inclined to reject unfamiliar suggestions from new members. Even in a 'brainstorming' session, when the group is actively seeking new ideas, it is psychologically difficult for members to produce ideas that deviate markedly from the general consensus. Fewer creative ideas emerge in a homogeneous group, in spite of the ease of communication."

37. *See* Mumphrey, Seley, & Wolpert. *A Decision Model for Locating Controversial Facilities,* 37 Jour. Amer. Institute of Planners 397.

of decision making in which bribes, in the form of additional facilities, are offered to disaffected communities to make more equitable (and palatable) the noxious effects of certain decisions. The intent of Wolpert's decision making models is to ensure that appropriate compensation is made so that political mistrust and potentially costly opposition (in both political and resource terms) is minimized. These models are explicitly bargaining models where gainers and losers trade concessions. However, it is conceivable that the whole matter of compensation might be even more equitably resolved using the overlapping task force structure discussed above.

CONCLUDING OBSERVATIONS

Environmental issues pose testing questions which strain the routine procedures of our existing policy making institutions. The shift toward more complex and more centralized bureaucracies responsible for "environmental" matters is an ill-considered response since it further restricts the openness of information flows, alienates the citizen from the decision making mechanism, and increases the likelihood of political authority being delegated to the non-elected executive. The arguments produced here hint that with a better understanding of the factors that shape the decision environment which frames the policy making process, more open decision making arrangements should be sought. But solutions can never lie in structures and institutions: in the final analysis the participants themselves will determine the success of environmental policy making. The test of the adequacy of these measures will lie only in their performance.