*Jnl Publ. Pol.*, **4**, 3, 237–59

# From Social Theory to Policy Design

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## ABSTRACT

Little attention has been given in policy analysis to the creative process of designing solutions to public policy problems. There are a number of difficulties in applying macro-level theories – whether from economics, sociology, philosophy or macro-systems theory – in the policy process. Any macro-level theory will tend to provide inadequate guidance in one or more of three aspects of policy-making: a model of causation, a model for evaluating alternatives and outcomes, and a model of how interventions operate. Our current knowledge about which policy strategies work best under which conditions is at best rudimentary. Academic disciplinary perspectives focus on a narrow repertoire of policy instruments. What is required is a design focus which draws on instruments associated with a range of disciplines and professions. A design perspective involves both a systematic process for generating basic strategies and a framework for comparing them. Such an approach will require at least the following elements: (1) the characteristics of problems (scale, collectiveness, certainty, predictability, independence); (2) characteristics of goals (value-laden, operational, process of goal-setting); (3) characteristics of instruments (suitability of different instruments).

## 1. *Introduction*

Governments have been in the business of making public policies for as long as they have existed, but frequently, or perhaps usually, they were making policy choices in areas about which they had very little real knowledge. Even in the now well-established policy areas such as education, crime, and international affairs there is little coherent theory for explaining how government could intervene in the most efficient and effective manner. This has resulted in policy-making by trial and error, or by analogy with other policies and programs, or simply by intuition. In

the literature on decision-making in organizations this form of decision-making has been characterized as the 'garbage can' model, where all inputs into the decision are thrown into the garbage can and the decision-makers decide which bits to retrieve as and when it suits them (Cohen, March and Olsen, 1972). In such a decision-making environment the results of any round of choices are scarcely predictable.

There are two major options for moving policy-making out of this garbage can; both require some more explicit attention to theory. One approach would be to employ social theory more explicitly in making public policies, and particularly to employ macro-level social theory as a guide for action. Policy analysis is, to some extent, applied social science (MacRae, 1976) and as such could apply the theoretical approaches of the social sciences to solving social problems. The most familiar case of this is the utilization of Keynesian economics as a guide for national economic policy-making. It has been argued, for example, that what is needed for policy-makers in the waning portion of the Twentieth Century is a comprehensive theoretical approach to the problems which beset many industrialized nations; without such an understanding at a very fundamental level, policy-making is indeed muddling through (Benjamin, 1983; Goodin, 1982). This call for a new Weber/Marx/Keynes for the emerging post-industrial world is intellectually appealing in many ways, as it would provide as (Benjamin points out) a parsimonious means of comprehending the world as well as a means of evaluating any proposed changes. As appealing as such an approach would be, we find a number of potential problems with the acceptance of such an approach as it might be applied through policy analysis, even leaving aside the normative implications of the social engineering which would be required by the approach and the more practical problem of locating the new Messiah.

The alternative to a more comprehensive theoretical understanding of the social world within which policy analysis functions is a better understanding of policy-making and policy analysis. If we better understand the characteristics of policy itself, and the characteristics of the policy process, we may be able to intervene more effectively into the social world even without a Keynes or Marx to guide us. Thus, we will be arguing that policy and the policy process can and should be understood without agreement on a social paradigm. (*Asinus asino, sui sus pulcher.*)

Such an approach need not be the 'muddling through' of incrementalism, as such an approach would have a firm theoretical base; that base would be in policy analysis itself rather than broader social or political theory. As such it can seek to provide answers to social questions without fully comprehending *all* the characteristics of the social process. This has risks (Goodin, 1982, 20–8) but so does waiting for the right social theory.

We will be adopting the perspective of policy analysis as a distinctive approach to social problems for several reasons. First, the 'emerging, post-industrial world' is one of great complexity, interdependence and indeterminacy. There will be a greater fusion of domestic and international polities and economies to the extent that national decision-makers will have less control over their own destinies. In addition, the increasing interdependence of policy areas and programs will mean that any intervention into one area may have significant consequences for many other policies and programs. This may be the very sort of world that may make the development and utilization of a comprehensive social theory approach difficult. This will be especially true if the type of theory envisioned is of a deductive and closely ordered nature (Alexander, 1965). Paradoxically, then, the complexity of the post-industrial world being described creates a great demand for a comprehensive theoretical understanding of social processes at the same time that it may make such an approach less useful for policy-making, especially policy-making at a mundane, program level. Thus, what may be needed as much as a theory of the post-industrial world is a theory of *policy design* which allows the policy analyst to deal with the complexity of the world in a more intelligent and contingent fashion (Dryzek, 1983).

## 2. *Policy design*

The application of ideas from the design sciences to solving social problems first appeared in the planning literature. Architects and others in the applied disciplines connected with urban design turned their attention to the organizational problems of the modern city. The basic idea was to externalize the process of creating solutions to ensure both its rationality and manipulability. Techniques for quantifying this design process and adding computer assistance were incorporated from operations research (which continues to play a controversial role in architectural design) and were coupled with an engineering perspective on problem solving. The most notable proponent of this approach to design has been Christopher Alexander (1964; 1965).

Not only could the process of designing be divorced from the thing designed, but it was no longer limited by the capacities of a single designer. Techniques to aid the design process could convert the designer from 'magician' working with intuition and insight to 'systems engineer' capable of decomposing a problem and systematically searching for an optimal set of possible solutions. These efforts to remove the individual designer's internal constraints and to widen the area of search drew the attention of Herbert Simon. His contribution to a design approach focused on the logic of the design process. He applied several of the

notions from his work in artificial intelligence to developing an algorithm for conducting problem-motivated design (1978). His emphasis on the hierarchical structure of problems and strategies for their decomposition linked the design focus to decision problems in the management science literature.

Early writers from this group concerned with design include Ernest Alexander (1982) (no relation), who studied the inadequacies of the policy formulation process with the framework inspired by Simon. In the last few years several authors have applied the design theme to problems of policy formulation in the Federal government; these include Mosher (1980), Salamon (1981), Wolman (1981) and Dryzek (1983). In each of these instances, the emphasis has been on systematizing the process of policy formulation to overcome both policy-makers' biases and the preferences of most analysts for *ex post* evaluation.

As noted earlier, our attention to policy-making has been skewed in favor of evaluating the consequences rather than the origins of specific alternatives. While subsequent effort is devoted to analyzing data on a given problem, little systematic attention is given to fashioning the means of providing a solution. Those involved in actually developing alternatives within the policy area tend to put aside training in systematic analysis in favor of a judgemental and intuitive approach. And with good reason, since little attention is given to design training in professional policy schools.

Several recent texts in policy analysis (Quade, Dunn, Mood) attempt to summarize in several sections the design experience of professional analysts. However, these commentaries typically offer advice on what not to do and what pitfalls to avoid in applying one's intuitions, rather than offering even a conceptual framework for undertaking design tasks. We are left with two views of design: an interactive and creative process with few rules and guidelines, or a winnowing process of heavily constrained search governed by a concern for feasibility. In the former case, designing is idiosyncratic and chancy, while in the latter, it appears deterministic and inertial. The utilization of a macro-theory as the background to design would tend to push design towards the more deterministic approach.

Even if we were not dealing with the complexity of the post-industrial world as outlined, however, there are a number of difficulties in the application of a macro-level theory in the policy process. As discussed by MacRae and Wilde (1979) policy-making requires: a definition of the problem, models and alternatives, criteria for the evaluation of alternatives, and an assessment of political feasibility. Stated another way, we will argue that to engage in policy-making one needs a model of causation, a model of evaluation and a model of interventions.

The *model of causation* allows the analyst to associate certain outcomes in the society with certain initial states; disease results from germs. There may be alternative models of causation – disease coming from an imbalance of humors in the body or from evil thoughts – and these alternative models may be associated with world outlooks such as Marxism.

The *model of evaluation* allows the analyst to map the outcomes of the policy process, or the initial state of society, into a set of normative premises about policy and society. These premises may be very broad, e.g. justice, or they may be more policy specific, e.g. efficiency.

Finally, the *model of interventions* guides the analyst in the selection of the locus and form of intervention into ongoing social and economic processes in order to produce a desired outcome. Thus, this would be a theory of at what stage government should intervene, and which of the tools in its toolkit (Hood, 1984) it should select.

We will argue that any macro-level theory will tend to provide very inadequate guidance in each of these three aspects of policy-making, and that again there is a need for a theory of policy design to aid in the formulation of policy, such a theory to contain within it guidance for understanding causes, evaluating outcomes, and guiding interventions.

## 3. *Politics in the postindustrial world*

Before returning to the fundamental problem discussed above, we should also point out the political difficulties which may be associated with the development of a more comprehensive vision of policy-making in the emerging post-industrial world. Two features of politics in the majority of industrial/post-industrial states would appear to make the utilization of a comprehensive approach to policy-making problematic. The first is the sectorization of policy-making. Whether the sectors are conceived of as 'iron triangles', 'issue networks' or 'woolly corporatism' it is clear that most policies are now made in semi-autonomous sectors, each with its own sets of actors, issues, and concepts (Jordan, 1981). Although the problems with policy-making in this manner are well known (Habermas, 1976, 62; Peters, 1981), there are also decided political advantages. In particular, fragmented political decision-making tends to be more consensual and depoliticized than decision-making in more open political arenas (Richardson, 1982) and it keeps difficult decisions confined within a narrow framework of the 'journeymen of issues' (Heclo, 1978, 106), who if they do not always agree on the solutions to problems certainly will agree on the problems.

The second political feature of politics in the post-industrial world is somewhat related to the first. This is the increasing demands for partici-

pation in decision-making (Inglehart, 1977). Participation has come to be valued as an end in itself, as well as for its instrumental value in affecting the distribution of public resources. This in turn means that policy-making in post-industrial political systems tends to be by bargaining and negotiation rather than by imposition or control. It also means that policy-making in these systems will be rather untidy – perhaps the price which must be paid for high levels of democratic participation.

Richardson (1982) has combined two aspects of policy-making similar to these to describe what he calls 'policy styles' in Western democracies. The two dimensions he employs are an active-reactive dimension, and a bargaining versus imposition dimension. Although there are differences among the six countries discussed using this framework, and among policy areas within those countries, the general finding is that these societies all tend toward the consensual/reactive cell of the four-fold table. This is, therefore, diametrically opposed to the active/imposition ends of the dimensions which would be the logical place for the political utilization of a macro-level theoretical approach. Also, in at least one of the countries where a more radical policy approach has been successful previously, Sweden, Ruin (1982) finds that this form of policy-making is less acceptable. Thus, the political style of the post-industrial world may make the use of a macro-level theory for policy guidance less acceptable to members of the society, and to members of an increasing number of organized groups, who may have theories of their own. The utilization of a macro-level theory would tend to be extremely centralizing. This may be useful given the nature of some of the problems in the post-industrial world which have been outlined. It would, however, run counter to many of the decentralizing trends seen in contemporary politics and, as Benjamin (1980) has pointed out, decentralization may not be costless.

As in most issues of importance, there is substantial disagreement with the characterization of government in the post-industrial world as being highly dependent upon its environment and upon agreement of the affected actors. Nordlinger (1982), for example, argues quite strenuously that the modern democratic state has substantial (and by implication) increased autonomy. He finds that these governments can indeed make decisions even when their policy conceptions diverge from those of the population. But even in this case the discussion appears to be more of a case-by-case exercise of authority rather than the imposition of a comprehensive framework of action. Even in perhaps the most single-minded government in a democratic country in recent memory – Mrs Thatcher's Great Britain – there have been some notable U-turns (Keegan, 1984).

### 4. *Macro-theory and policy-making*

To return to the main line of argument, the shortcomings of applying a macro-level theory to the policy process might be illustrated best by briefly considering the well-known case of macro-economic theory. Putting aside for the moment the widespread disagreements over the appropriate premises of the theory, many of the problems connected with its policy relevance are a product of its scope – in a sense it is too macro a theory for generating policies with any precision. While aggregation has permitted theorists to explain the behavior of a complex economy by means of a few basic relationships and a small number of economic forces, it has also clouded the impact of policy interventions on economic actors and immersed policy development in guesswork.

Aggregate indicators of economic performance, summarizing the behavior of prices, output and unemployment for example, serve as proxies for the outcomes of a variety of micro-level adjustment processes. Relying on these proxies as target variables for constructing and monitoring policy instruments requires more than a courageous *ceteris paribus* assumption; the known and unknown adjustment processes must behave in a uniform, reliable manner. When adjustments are not largely uniform in space and time, or when their performance is idiosyncratic, the information summarized by an aggregate indicator is seriously compromised. This can bias policy targets, at times signalling the need for intervention where none exists, while hiding a genuine need when one arises.

Much of the policy debate in the past few years has centered on stabilization policy, the use of various instruments to counteract short-term fluctuations in economic performance. Advocates of smoothing fluctuations in aggregate demand (Tobin, 1981) generally call on monetary and fiscal instruments; more recently, those concerned with disruptions in aggregate supply (Okun, 1981) have turned to incomes and manpower policies. The task of design in this context is not so much one of fashioning new instruments as of finding the plausible interventions. As generic policy strategies, the available instruments, taxing and spending for example, are highly institutionalized and are widely viewed as the most potent sources of potential, policy-induced changes in the economy. Despite their power, these instruments can rarely be wielded with any precision.

On the one hand, design from a macro-theory warrants caution. Because the details of the micro-level adjustments in the economy are open to dispute we can expect lags of indeterminate duration in the responses of policy targets to any particular intervention. Furthermore, we cannot be certain about either the location or the magnitude of the

eventual effect of an intervention. Designing an instrument to have a precise effect of a given magnitude is practically impossible. Moreover, many of the available instruments work in an antagonistic fashion. Using one instrument to reach a selected policy target may actually move us farther away from other targets. Raising output toward full employment through an expansionary policy that applies fiscal instruments will disrupt the trade balance, for example. To keep both targets in line we need an additional instrument to reverse the negative effects of the first, and so on. As two noted theorists (Dornbusch and Fischer, 1982) have noted, we normally require as many instruments as there are targets. Every time one instrument is used it spoils the balance achieved by another. If we design the right instruments, these displacements should diminish in size; otherwise the increasing interdependence of portions of the economy will mean that they will grow.

On the other hand, design may be viewed as altogether ill-advised. Some theorists eschew these instruments, viewing the products of any design effort as typically too blunt and the prospects of success in using them as too remote. Theorists such as Sargent and Wallace (1976) would prefer to rely on market forces to restore the level of equilibrium to the economy and view most policy instruments as an additional source, rather than cure, of disruptions. Those advocating interventions find the self-adjusting propensities of the economy too sluggish or largely ineffectual. Unfortunately, the resolution of these views must await a more extensive articulation of the behavioral foundations of the theory at a micro-level. If we fix our focus on the macro-level, we are left wondering whether to design at all; a curious implication for a macro-theory with such an elaborate scheme of causation. Unless the micro-level assumptions were well-articulated the theory would have little hope in providing guidance for designing effective and efficient public policies.

The experience with macro-policy theory in sociology has been little better. Attention to social processes has produced a rather elaborate set of causal propositions regarding institutional change and social development, but little in the way of refined policy instruments. The work of Weber and his followers concentrates primarily on the role of various background factors – Protestant ethic, leadership style, organizational climate – in accounting for the development and performance of social institutions. Changing these features, say to improve performance on some criterion, requires substantial leverage. In effect, one has to undo the result of an evolutionary process, overcoming built-in equilibriating and defense mechanisms, as well as neutralizing counterforces in the environment. Unlike macro-economics, macro-sociology has few tools available for reaching any given policy target; as a result, theory is as likely to support the shotgun or the sledgehammer as it is the scalpel

(Scott and Shore, 1979; Sieber, 1981). The approach of critical theorists in sociology supports this view. Remedying social problems, in their view, requires fundamental changes not only in social policies, but in the institutions and people that make them. The potential for error and the social costs of intervention on this scale are what frightened Popper (1945) and Hayek (1944) so much about centralized planning. However, social planning or the use of theory in policy-making per se is not the basic problem. The problem rests with the affinity of macro-theory for blunt instruments.

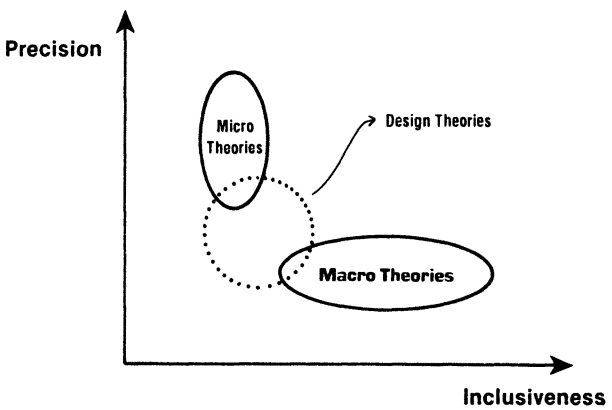
Although enamored of macro-theory, Etzioni (1968) is nonetheless concerned about the blunt instrument problem. Rather than reverting to the atheoretical position of the hardline incrementalists (Lindblom, 1965) he advocates various forms of a mixed-scanning approach – theoretical in its choice of interventions but incremental in their adjustment and revision. This, of course, is basically the same process of 'fine-tuning' used by advocates of stabilization policy to correct potential instrument errors. Once again, the difference lies in the relative availability of levers and concrete targets (Hogwood and Peters, 1985). Etzioni is left with the problem of how to guide social processes. While he can specify the dynamic underlying these processes in different contexts, his choice of intervention points is guesswork at best.

The difficulty faced by sociologists and economists in developing refined instruments from macro-policy suggests that the limitation resides not in the particular disciplinary approach or in the details of the theory, but in the nature of macro-theory itself. While one of the principal ways of differentiating macro from micro theories is scale – macro-theories adopt aggregates as their unit of analysis and focus on systems-level phenomena – the shortcomings of macro-policy approaches can be tied more closely to the implicit tradeoff between precision and inclusiveness that an increase in scale demands. We cultivate precision in our theories by controlling, or at least understanding, many of the individual sources of variation that macro-theories typically regard as sources of error. Unfortunately, as we expand our theories to be more inclusive of causal relations, values, or instruments, our ability to maintain precision rapidly diminishes. Maintaining both precision and inclusiveness is the hallmark of elegance among theories in the natural sciences, but is as yet too complex a task for the social and behavioral sciences. Levels of aggregation correspond to levels of acceptable error in dealing with human behavior. Thus, to a large extent, the transition from a micro to a macro-level explanation involves the implicit choice between alternative mixes of precision and inclusiveness. The available set of choices is constrained by complexity.

Consider the choice space depicted in Figure 1. To develop a serviceable design theory we need to maximize precision without sacrificing a

great deal of inclusiveness. This takes us to the fabled middle-range (Merton, 1957) at the intersection of macro and micro approaches. Here we can find the optimal mix to satisfy each of the three dimensions of design theory: causality, evaluation and instruments. In the case of instruments, for example, not only is a broad range of different kinds of instruments needed, we also need precision in our mapping of instruments into problems. Imprecision, of course, means that we would likely have both sleeper and spillover effects, many of which might exacerbate the problem of concern (Goodin, 1982, 22–4). Macro-theory alone, despite its capacity for accommodating a greater array of causes, values and instruments, cannot provide the necessary precision. Moreover, as we will see, the inclusiveness of macro-theory generates its own, internal contradictions.

FIGURE 1: *Tradeoffs between precision and inclusiveness*




## 5. *Toward a theory of evaluation*

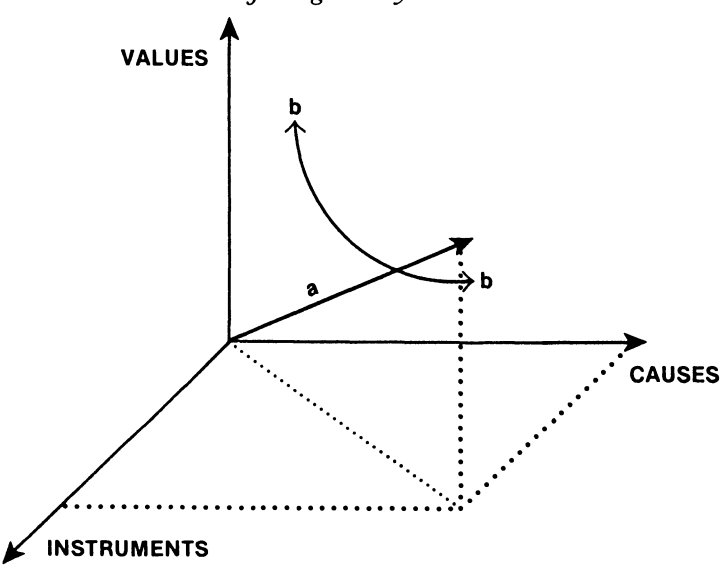
Evaluation is widely recognized as an integral part of the policy-making process. It is at times a rather simple mechanical exercise of applying statistics to the outcomes (or presumed outcomes) of policies and assessing the extent to which the policy reached its goals (or presumed goals). If, however, we begin to think about evaluation in a broader theoretical sense, and from the perspective of policy design outlined previously, some important problems arise.

The problem with making a claim to incorporate fundamental values (e.g. justice, fairness, equality) into any macro-policy theory is that we need a macro-level theory of evaluation for doing so. If we disavow macro-theories because of their weaknesses in generating propositions about instruments (see below), we may have to stick with an operational theory

of evaluation as well. Consider Rawls' (1971) theory. Although he has an elaborate macro-theory of evaluation, he has only a rudimentary theory of instrumentation and not much of a theory of causality. Macroeconomics, on the other hand, has a well-developed theory of causality, a rudimentary theory of instrumentation, but little theory justifying its normative premises. As a general rule, the stronger the theory of causality at the macro-level, the weaker the theory of evaluation and vice-versa. This is largely the produce of the incompatibility between the instrumental logic of our causal assertions and the non-instrumental nature of most of our societal overriding values.

Let us consider the constituent of theoretical 'strength' most closely associated with macro-policy theory, inclusiveness, and reexamine this general rule. To aid our reexamination, as well as to illustrate our earlier points, we will construct a heuristic device involving the analytic representation of macro-theories as points in a three dimensional space. Each dimension will correspond to one of our three design ingredients – causes, values and instruments – and positions along these dimensions will represent degrees of inclusiveness. An example appears in Figure 2. As we move to the right in Figure 2, we will find theories accommodating increasingly greater numbers of causal variables and relationships. Moving upward vertically signifies an increase in the array of values, and moving outward increases the types of instruments. From our earlier

FIGURE 2: *Three dimensions of design theory*




**Note:** Dimensions are ordered according to increasing inclusiveness.

statements about inclusiveness as a definitional attribute, we can show macro-theories as falling some distance from the origin in this space. In addition, the optimal mix of precision and inclusiveness proposed earlier as a distinguishing feature of design theory can be represented in this space. Balancing the need for precision against the demands of inclusiveness must take place for each of these dimensions. As a result, we would expect design theories to fall somewhere along the middle portion of the diagonal from the origin, labelled '*a*'. The curve labelled '*b*' in Figure 2 illustrates the logical contradiction suggested by the general rule stated above. Capturing a greater number of causal relations demands an increasingly narrow set of values in order to refine the focus of one's explanations. Conversely, attention to greater numbers of values eventually leads one beyond causal relations to consider relations of other types (e.g. responsibility, obligation).

Consider the extreme example of a complex macro-policy approach which has highly inclusive theories of *both* causality and instruments. Macro-systems theory (Kozmetsky, 1980), the approach underlying our largest scale engineering projects (NASA's Project Apollo, the Jubail Petrochemical Complex, etc.), represents the best the design sciences have to offer. Its practitioners, moreover, are quite optimistic about the approach's applicability to policy-making: 'macro-engineering must be co-joined [*sic*] with social engineering at the macro-systems level so that newer institutional arrangements – economic, political, social – can be formed that solve today's and tomorrow's human and social needs' (Kozmetsky, 1980). This carries the endorsement of the American Association for the Advancement of Science (Davidson *et al.*, 1980). The advantages of this macro-systems approach over the other macro-theories based in social science is its capacity for reaching a higher degree of precision for any given level of inclusiveness. In effect, it is a theory which can be applied at either micro or macro levels, spanning the space shown in Figure 1.

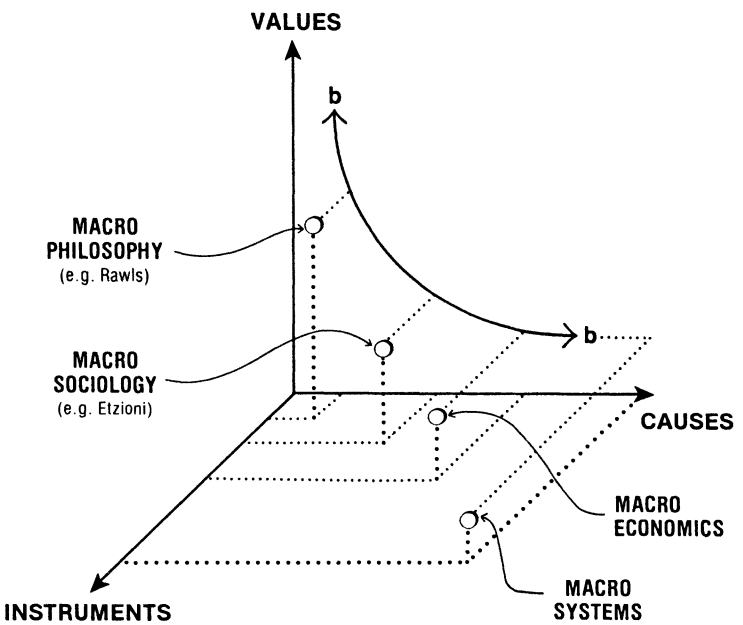
However, its capacity for accomplishing this is based on the careful exclusion of behavioral and social phenomena. Performance is equated with the ability to meet certain mechanical and physical stresses within fiscal limits. The one caveat acknowledged by the proponents of this approach is the often troublesome problem of 'cultural impact'. The products of macro-systems design are typically large-scale projects that have profound socio-cultural impacts on the societies that choose to undertake them. Solutions of the technological and managerial aspects of the problem can be accomplished within the macro-theory. The issue of social values remains.

Figure 3 fills in Figure 2 with examples of the four classes of theories introduced in the preceding sections. Macro-systems theory, while the

most inclusive of instruments and causal relations, is largely exclusive of social values. In a sense, this represents asocial engineering; thus, it is not the ideal prototype for policy design that some say it is. Macro-economic and macro-sociological theories appear at a lower level of causal and instrumental inclusiveness, with the latter accommodating far fewer instruments. Finally, the macro-philosophical theories appear higher than the other theories on values but lower on the remaining dimensions. Notice the suggestion of a pattern resembling the curve labelled '*b*' in Figure 2. Notice as well the absence of any cases close to the diagonal labelled '*a*'. Filling in this diagonal is one way of defining the task facing the developers of a theory of policy design. It is not a task which can be accomplished from the macro perspective alone.

Moreover, as a practical matter, industrialized societies typically avoid direct dealings with fundamental values for policy purposes because of the potential conflicts this might create. Value-laden matters are generally settled through some type of mechanism which can sustain pluralistic competition while fashioning temporary resolutions on specific policy issues. The design of effective policies, then, is better served by focusing on the instrumental values which play a prominent role in problem recognition and definition. Instrumental values not only define desired performance at an operational level and reveal any gap left by existing

FIGURE 3: *Macro theories and design dimensions*



practices, but also identify the underlying attributes of a desirable instrument.

The designer's efforts should eventually yield a match between a generic strategy or set of instruments and a specific policy goal, but need go no further. Sorting out conflicts between fundamental values or implicitly weighting the claims of different individuals are better left to the decision-makers authorized to make the ultimate choice among plausible alternatives. The designer need only reach what the decision-maker considers a 'satisfactory' degree of approximation in a suggested match between goal and instrument. In this context, the designer's criteria are non-decisive, generating an agenda of plausible alternatives representative of certain generic strategies. Restraint by the designer, resisting the temptation to interject certain values or artificially delimit choices, not only disciplines the design process but recognizes the legitimate role of qualitative judgement in reaching policy decisions.

Efforts to systematize the decision process or to represent implicit values in quantitative terms should remain logically distinct from the design process. Although one may consider the fashioning of choice models or mechanisms a proper design problem, it is a second-order task which must presume that the design of alternatives has already taken place. Separating the design of instruments from the eventual selection process does not rule out the iterative refinement of instruments until one converges on a single 'best' choice. Rather, we are arguing for an analytic division of labor which will insulate the design process from choice-connected biases that lead to premature closure. In sum, the evaluation of designs, from the building of generic strategies through the screening and sorting of substantive alternatives, need not employ criteria as demanding as those applied to choices. By emphasizing the instrumental values over non-instrumental ones, we can avoid the pitfall common to many evaluation methods, including cost-benefit analysis, of claiming too much in view of the poorly developed nature of one's theory of evaluation.

## 6. *Why a theory of interventions?*

One of the basic lessons of the Great Society's policy experiments during the 1960s is that our most pressing problems can not be solved simply by spending enough federal dollars (Aaron, 1978). While concern for the scale of policy solutions has prompted a reassessment of federal efforts in many policy areas, there have been only minor revisions of the solutions themselves (Schulman, 1980). For the most familiar problems facing society – crime, pollution, urban blight – there is little understanding of the factors which contribute to a policy's eventual success or failure. Knowledge about which strategies work best under which conditions is at

best rudimentary. Yet, without this knowledge society must rely upon trial and error for developing the solutions to its policy problems. Under these circumstances, only the most familiar strategies receive attention as possible solutions. Strategies producing even minimal success are guaranteed not only longevity but many reincarnations. For example, social insurance schemes, despite their fiscal limitations, have been recycled from their applications to problems of labor markets to health care and are viewed by some as holding promise for product safety problems. Earlier strategies, including previously discredited ones, constantly reappear as new solutions (Hogwood and Peters, 1983, 261–4). Hoover's Reconstruction Finance Corporation, for example, has reemerged as a progressive strategy to promote economic development.

Informed by only fragmentary evidence, the formulation of most strategies proceeds on an *ad hoc* basis. Components of other strategies which are presumed to be successful are incorporated in a haphazard fashion. Moreover, there is a tendency to choose policy instruments on the basis of how they work, without seriously considering how well they may perform given what needs to be accomplished. We routinely identify problems with the method used to deal with them, e.g. regulation, to the point of naming a problem by its corresponding method. This practice is especially evident in our treatment of legal remedies, but also shapes our view of market failures.

Also, because of an absence of an adequate theory of interventions, there is a similar tendency to label problems with nominal, functional titles, e.g. health, education or defense. Such a labelling scheme tends to lump together problems requiring (probably) very different forms of intervention. For example, the 'health' problems of quality assurance probably should be treated by very different mechanisms than problems of cost control. Unfortunately, we do not have an adequate guide for choosing what methods of intervention would be most appropriate for either. We especially are not sure why one would be more appropriate than another for either problem.

Unfortunately, defining a problem in terms of a strategy for solving it reinforces the bias toward favored strategies and deceptively simplifies the formulation process. Poor performance, then, is attributed not to the choice of the wrong policy instrument, but to the symptoms of poor choice such as waste and mismanagement. The failure of a poorly fashioned program is too often blamed upon the implementor, under the mistaken presumption that success is a product of the program's adaptability in the field, rather than its underlying strategy.

The artificial separation of social science theory from the formulation of practical policy inhibits the application of insights from research to the design of concrete solutions. Apart from economics, the social sciences

typically resist the formulation of novel alternatives for improving policy (MacRae, 1976). Although acknowledging some value bias, efforts to combine judgements about values with empirical propositions to influence policy are viewed with suspicion. While economists have contributed readily to policy advice, an emphasis on one value – economic efficiency – over others has restricted both the variety of proposals and the basis of evaluation. To the extent that economic instruments are restricted to altering market incentives and changing information and ownership conditions, other disciplines have a complementary contribution to make. Sociology focuses attention on changing norms and organizational arrangements, psychology on changing preferences and beliefs, anthropology on changing symbols and social relations, and political science on changing policy processes and political institutions. The variety of disciplinary perspectives can expand the range of political instruments and the values which they serve.

Although the design of physical forms to solve certain problems has long been a central focus for the applied sciences, such as engineering and architecture, no comparable focus on the design of solutions for public problems has emerged within the policy profession (but see Alexander, 1982). The emphasis on fashioning solutions which once characterized the planning profession with its emphasis on social reform has given way to a limited focus on evaluating the short- and long-term consequences of alternative policies. Policy analysts, trained primarily in the social sciences, also deemphasize the design of solutions, preferring instead to concentrate on the comparison and evaluation of given alternatives. Left to the political process, designs emerge less as the result of creative, systematic effort than as a product of experiences, precedent and expedience. Analytic skills simply are not devoted to the formulation of alternatives. The professional analyst typically accepts the set of alternatives as given, the product of some advocate's entrepreneurship and of political compromise. The analyst's role then is not to remake the alternatives but to predict their impact and, to an increasing degree, to evaluate the prospects for enactment and trouble-free implementation.

However, if the design of policy instruments is left to intuition, and the details worked out informally, the analyst's emphasis on evaluation is misplaced. The outcome of policy will be shaped more by the agenda of alternatives and the values underlying it, than by the results of the analyst's formal evaluation. For example, once the strategies for dealing with social risks are limited to various forms of direct controls on private activity, subsequent evaluation of the controls' performance is virtually irrelevant. Alternative means that might prove less costly and perhaps more effective have been foregone. The design and formulation of strategies must be given systematic attention if we are to overcome institutional

and conceptual obstacles to innovativeness in our policy solutions. At present, no middle-range theory for guiding the design of specific policy strategies exists. Without even a rudimentary theory, there is no way of assigning a policy instrument to a problem with any confidence of the outcome. Similarly, there is no direction for developing new instruments or adapting existing ones to different purposes.

A focus on the design of policy instruments shifts attention from the evaluation of different substantive programs to a concern with the basic strategy implicit in each alternative. What kind of instruments, if any, should the government employ for a particular problem, and why? More importantly, how do we define an instrument as the appropriate choice for a particular task, and what values are at issue? Research on the design of policy should address these questions in the course of developing a theory that will accommodate familiar instruments, such as taxation and price or quantity controls, and suggest new ones. The instruments associated with the perspective of any one discipline constitute only a limited set of cases. The study of designs, then, should range from the legal profession's focus on changing entitlements or liability rules to the economist's concern with pricing schemes.

Whether the problem is an architectural, mechanical or administrative one, the logic of design is fundamentally similar. The idea is to fashion an instrument that will work in a desired manner. In the context of policy problems, design involves both a systematic process for generating basic strategies and a framework for comparing them. Examining problems from a design perspective offers a more productive way of organizing our thinking and analytical efforts. Once the set of basic instruments is developed, attention can be devoted to the substantive details of each alternative. The analyst must ensure that an appropriate range of designs is advanced during the formulation stages of policy-making. Systematic attention to design will not only enhance the performance of the alternative eventually chosen, but also expand the opportunities for serious consideration of innovative strategies.

Efforts to develop a theoretical approach to interventions should have several goals. The first is to adopt a coherent approach to policy problems which stresses the central role of design. This involves a reorientation of conventional policy analysis away from *ex post* evaluation and a preoccupation with the substantive details of particular programs to the development of generic strategies for solving problems. Consider the issue of consumer protection. While there is no general theory of regulatory design identifying certain strategies for consideration, we can propose a range of strategies, which emphasize different criteria, and then examine their implications. We might consider various information instruments (such as mandatory disclosure of consumer education), direct controls

(such as design or performance standards), and legal instruments (including liability and negligence systems). Moreover, each of these pure strategies might be combined with others to form hybrids and implemented in ways that stress selected values, perhaps emphasizing equity over cost minimization, or discretion over accountability (Bardach and Kagan, 1982).

The second goal of policy design is to fill in the gaps of our knowledge about what might work and to broaden our view of possible strategies. In the process, various obstacles to innovation in policy design – disciplinary prejudice favoring the elaboration of causal theories, biases toward familiar strategies, reliance on *ad hoc* formulations, parochial views of feasibility – must be confronted (Scott and Shore, 1979; Sieber, 1981). Following conventional practice in the design professions, we can enhance the productivity of our efforts by carefully organizing both the search among existing strategies and our efforts to create new ones. Establishing a logical procedure for designing policy instruments not only reduces the likelihood of errors but also makes explicit the thinking that goes into the development of each design. Complex problems, then, can be reduced to manageable proportions by clarifying basic design requirements and developing plausible strategies for their solution.

## 7. *Notes towards a theory of design*

As we stated in section 2, policy analysis requires an understanding of causation, of evaluation, and of intervention. The approach to policy design which we have been sketching here will require at least the following elements to deal with the complexity of design problems in the complex world in which policy is now fashioned.

### *7.1 Characteristics of problems*

Rather than dealing with policy problems in nominal categories (health, education, or regulation, i.e. categories bearing either the name of a 'policy area' or of a tool), we should develop some attributes of policy problems which will be useful for designing interventions. These might include such things as:

*1. Scale.* As discussed by Schulman (1980), scale implies that some policies cannot be effective unless some threshold size is attained. Obviously, designing interventions for policies of this type will be different than for policies which can be managed more incrementally.

*2. Collective consumption goods.* Goods of this sort have special features which may influence the manner in which they must be treated in the policy process (Benjamin, 1980).

*3. Certainty.* In designing policies, we can be certain – or relatively certain – that some environmental changes have occurred and less certain about others. For example, we are quite sure that major demographic changes will be occurring in almost all industrialized societies. We are somewhat less certain of the occurrence, extent, and nature of changes in the natural environment.

*4. Predictability.* Certain occurrences can be predicted on a 'if $x$, then $y$' basis. This does not appear to be the case for much of social change. As in the Moon and the Ghetto analogy, some seemingly difficult problems can be engineered more readily than others.

*5. Independence.* In the contemporary post-industrial world, virtually all programs and policies are impacted by international forces. Even seemingly domestic issues such as social security programs may be heavily impacted by external events, e.g. interest rates in the international market. The degree of independence of a program is, however, a variable, and decision-makers must understand the degree to which they can, or cannot, determine the outcomes in a particular policy area.

### *7.2 Characteristics of goals*

We have to understand better the nature of the goals which may be posited for public programs. As noted in section 2, these may be broken down first into the heavily value-laden goals such as justice, equity, etc., and the more operational goals such as the types of economic criteria used to justify governmental intervention into the economy (Wolf, 1979). Goals are among the least well-understood components of policy-making, and a great deal of additional work is required to be able to bring them into the policy design process in a more operational manner.

As noted in section 5, the importance of goals in policy analysis also implies some attention to, and respect for, the nature of the process through which goals are set. Unlike the asocial approach to policy design exemplified by the macro-systems approach, an approach to policy design workable within the context of democratic policy-making systems will require some attention to both goal-setting and goal clarification through the political process. This does not mean, however, that the policy analyst and the 'policy organization' must be only reactive to goal statements produced elsewhere; they can and should be quite active in attempting to modify goals. They must, however, remember that technical solutions do not necessarily imply the goals that would justify them.

At the present state of development of value theory in policy analysis, perhaps the best the analyst can hope for is to inject goal statements into the analysis in a contingent fashion. That is, the analyst may be able to tell the decision-maker that if $X$ is his or her principal goal then $x$ should be the

policy adopted within the context of the range of alternatives available. It may well be that there may be no alternative readily available that scores highly on that particular goal; without the more explicit attention to goals and the design process the decision-maker might not be made aware of that weakness in the range of alternatives considered.

### *7.3 Characteristics of instruments*

As noted in section 6, this will be a major component of any theory of policy design. Some preliminary work has already been done on this problem. For example, Hood (1984) has classified the 'tools' available to government as NATO (nodality, authority, treasure, and organization). Again, a great deal more must be done to gain an understanding of the

TABLE 1: *Rudimentary appraisal criteria*

| Criteria | Model | Instrument |
|---|---|---|
| 1. Relevancy | Does the model describe the policy content? | Does the instrument relate directly to the policy problem? |
| 2. Distortion | Is there a bias between the model and the reference system? | Will the instrument cause distortion of other social or economic processes? |
| 3. Stuctural integrity | Is the model design based on internally consistent principles? | Is the instrument based on internally consistent principles? |
| 4. Reproducability | What is the model's 'track record' for replicating historical data? | Has the instrument been successful in similar situations? |
| 5. Tractability | Is the model easily used? | Is the instrument easily used? |
| 6. Accessibility | Are the model's input and output familiar and intelligible? | Is information available to make the instrument work and to monitor its effects? |
| 7. Flexibility | Is the model design capable of undergoing change? | Can the instrument work in a changing environment? |
| 8. Common sense | Are the model's forecasted results offensive to basic intuition? | Does intuition tell one the instrument should be effective? |
| 9. Credibility | Is there consonance between the model-builder and the policy-makers? | Do those administering the instrument believe it will be effective? |
| 10. Efficiency | What are the costs associated with operating the model? | What are the costs associated with operating the instrument? |

Adapted from Hall (1975).

nature, political, social and economic, of the weapons which governments can wield.

One checklist which may be useful in evaluating the utility of instruments for particular settings was developed by Hall (1975) for the evaluation of policy models. Table 1 contains the ten criteria developed by Hall, along with the descriptors he applied for policy models and descriptors we have developed for policy instruments. In some of the cases the criteria applied to a model may not be obviously applicable to a policy instrument. For example, the criterion of distortion implies rather different things when discussing possible bias in a computer simulation and the distortion which a policy instrument may cause in other elements of the policy environment. This checklist does, however, provide a place at which to begin thinking about the types of questions which must be asked every time governments begin to intervene, and begin to select the instruments they will use to intervene. In a similar vein, May (1981) has assembled some 'hints' for crafting alternative policies. As with our checklist and earlier admonitions about reasoning by analogy, May warns against misclassifying problems and applying stock solutions to difficult, complex, and perhaps novel problems. All these ideas and approaches merely reinforce the basic premise that there is as yet very little in the way of a theory of instrumentation in policy design, and that there is a need for such a theory. Such a theory would, of course, need to meet the criteria of inclusiveness and precision which have been advanced earlier.

## 8. *Summary*

In summary, we have attempted in this article to lay the groundwork for a more theoretical approach to policy-making through a concept of policy design. This work is as yet rudimentary, but hopefully it will allow us to address the difficult problems in a way that will produce effective and efficient public interventions, rather than the almost random interventions which we would argue characterize much contemporary policy-making. We have argued that such a theory of policy design must contain means of including causation, evaluation and instrumentation. We have further argued that concentrating on such a theory of design which is specifically *policy* related will be a more efficient means of improving public policy-making than will be waiting for the development of more robust and precise macro-level social theories.

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