Approaches in Public Policy Research and Analysis

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1. Introduction

Since the argument for the interdisciplinary approach to the study of public policy by Daniel Lerner and Harrold D. Lasswell (1951), diverse approaches along with different frames of reference and theory-based terminologies have addressed the policy studies. If we are considering the complicated power politics armed with logics in the academy where a scholar argues his theory with the mind of minimizing anti-attacks from the others, if we are considering the diversity of types of problems, 'time' and 'place' on the one hand, and problem consciousness, inquiring systems, world views, frames of reference and academic backgrounds of the policy scientists on the other hand, or if we are considering the inevitable influence of a theory upon the other theory-building, it is very difficult to discuss this delicate question well.

It is possible to let diverse approaches in the field of the policy studies be diverse functionings of a parametric behavioral variable (the policy study) on the gradient dynamic system (the real world). [See Zeeman's catastrophe theory (Zeeman, 1978.] In identifying some distinctive approaches each of which contains theories, methods and techniques of policy analysis, we can find the fuzzy boundaries, overlapping ideas, as well as antagonistic frames of reference. However, they will work, I hope, as ideal types in discussing approaches and the nature of and relationship between research and analysis in public policy research and analysis. They are: 1) rational, comprehensive approach; 2) neo-pluralist, incremental approach; 3) general systems, cybernetic approach; and 4) value-critical, learning-adaptive approach.

2. The Relationship between Policy Research and Policy Analysis

In its most general sense, policy analysis (Dunn, 1981a: 7) or policy

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science (Lasswell, 1971: 1-2) may be understood as the process of producing knowledge *of* and *in* policy processes. This knowledge would be produced through a process of inquiry which involves five policy-informational components (policy problems, policy alternatives, policy action, policy outcomes and policy performance) that are transformed into one another by using six policy-analytic methods (problem structuring, forecasting, recommendation, monitoring, evaluation and practical inference) (Dunn, 1981a). The relationship between policy-informational components and policy-analytic methods provides a basis for distinguishing 'research' from 'analysis'. Williams (1971: 13) has described that policy 'research' as "all studies using scientific methodologies to describe phenomena and/or determine relationships among them," and policy 'analysis' as "a means of synthesizing information to draw from it policy alternatives and preferences stated in comparable, predicted quantitative and qualitative terms as basis or guide for policy decision." In other words, 'research' deals with what happens after an (policy) action and 'analysis' refers to the inquiry of what happens before an action. Dunn's retrospective policy analysis and prospective analysis (1981a), Ham's analysis of policy and analysis for policy (1980), and Dye's policy impact research and policy determination research (1976), are different expressions of same meanings which identify these two "forms of policy analysis" (Greenberger et. al., 1976:2). Thus, we can specify the respective nature of 'research' and 'analysis' by using their temporal relation to action (Dunn, 1981a: 38.)

Although a certain reification of the two notions seems to emerge in that they are dealt with as if they were distinct activities (Dror, 1969: 6) in strict sense, some substantive issues of metatheoretical and methodological nature that now subsume their practice attest to their belongings to the same scientific project. Dror (1976: 52) has said that "prescriptive categories... must be considered when the elements for a descriptive-explanatory study are developed." As such, they have the symbiotic relationship and fuzzy boundary between them. It is also worth noting that there are symbiotic relationships and fuzzy boundaries between discipline researches and 'policy research-and-analysis'. Coleman (1975: 25) has distinguished discipline research (testing and development of theory or conclusion-oriented research) from policy research (a guide to action or decision-oriented research). 'Policy research-and-analysis' may contribute to the development of theory

and may be acknowledged by discipline based scientists (MacRae, 1976: 280).

In the remainder of this essay, policy research refers to a guide to action which provides the conceptual/methodological input for developing and critically assessing the methods and techniques of policy "analysis" (Coleman, 1975; Gans, 1975; Dunn, 1981a). Also, the term "analysis" will be used to refer to the transformation and use of methods and techniques of problem structuring, forecasting, goal setting and policy design, monitoring, evaluation and practical inference, which have been developed in doing policy research (macronegative) or analysis (micropositive), within political settings to resolve problems of public policy (Dunn, 1981a; Dror, 1971).

3. The Rational, Comprehensive Approach

The researchers/analysts in this category have regarded planning as a central, coordinative and rational process, as a comprehensive and consistent process of grand design in holistic terms (Friedmann, 1971: 316), and as a problem solving activity (Dye, 1972: 1). The epistemology is logical positivism and "value non-cognitivism" (Fisher, 1980: 2; see also Reynolds, 1975). The key influence of positivism has been on methodology rather than content (Wilson, 1980: 120). They generally have stressed the logical structure of scientific theory, the use of mathematics, symbolic logic, analytic truth, and probability as the language and methods of science, and value-free, cognitive, rational investigation. They are analycentric and assume the knowledge of facts sufficient.

Policy research within this approach has stressed effectiveness rather than the decision-making processes that lead to the adoption of policies (Nachimas, 1979: 4). The researchers are mainly concerned with scientific and technical verification, that is, objective information on the outcomes of programs (Weiss, 1972: 2). Neither do they challenge the goals nor the policy itself. They are inclined to apply logical and mathematical systems to empirical system, *inter alia*, systems and model building in the social sciences (Kaplan, 1968: 389-394). The development of econometric forecasting models and simulation procedures (Greenberger, et. al., 1976), refinement of concepts of probability theory and decision analysis (Baird, 1978; Fishburn, 1980), and development of complex quantitative technique for

multiple criteria decision making (Keeney and Raiffa, 1976) are examples of types of research conducted within this approach.

Analysis within this approach corresponds roughly with what Ackoff (1974:25-26) calls preactivism. Here, preactive planning and problem solving is based on logic, science and experimentation than on common sense, intuition and judgement (Ackoff, 1974:25). This approach proceeds by taking goals as given and attempting to determine what policies will achieve or maximize these goals (Nagel and Neef, 1976). The emphasis is on problem solving with efficiency as the major criterion for selecting alternative means to the desired end. Perhaps the two best known advocates of this approach are Lasswell and Dror. The policy scientists, to Lasswell (1968: 181-189; 1971: 1-13), are those professionals who utilize the skills and techniques provided by such tools as operational research, cost-benefit analysis, and computer simulation to contribute to a dependable theory and practice of problem solving. Policy analysis, to Dror (1971: 55), is a pre-scriptive and heuristic aid for identification of preferable policy alternatives. Dror views policy sciences as a major effort to apply structured rationality, systematic knowledge, and organized creativity to better policymaking (1971: ix). Dror, more critical than Lasswell of the shortcomings of past applications of the rational planning and decision-making models, maintains that 'systems analysis' has still proven to be the most promising approach to social problems, particularly when built on behavioral sciences and the analytical approaches offered by decision theory, general systems theory and the management sciences, and argues megapolicy and metapolicy (1971: 63-79). However, their main orientation of this approach is decisionistic and their mode of inquiry analycentric, both preclude them to properly address political, social, and administrative (as well as ethical) aspects of public policy (Dunn, 1981a: 21-22).

4. The Neo-Pluralist, Incremental Approach

The researchers/analysts in this category have argued mutual adjustment processes ("acceptable" or "satisfying") rather than rational, comprehensive approach ("optimal" or "maximizing"). They have developed a "new concept of planning," through the attempt to achieve rational politico-economic action (Dahl and Lindblom, 1953: 20), and argued "muddling

through" (Lindblom, 1959), disjointed incrementalism (Braybrooke and Lindblom, 1963: v-vii, 3-19, 83-106; Hirshman and Lindblom, 1962: 215-216) and process criteria of rationality (Grauhan and Strubelt, 1971: 251). The epistemology is also positivism, but their theories have intimate relation with business, marketing, group theories of politics (bargaining) and concepts of conflict and equilibrium.

Policy research within this approach is closely identified with the writings of Lindblom. He has developed such ideas as a conservative but adaptive approach (Braybrooke and Lindblom, 1963: 244), partisan mutual adjustment (1965: 3-12, 330-335), a hierarchical structure of participation and influence (1968), and social interaction and a preference-guided society (1975). The argument for process rationality which corresponds with the principles of democratic processes have been supported by many scholars [e.g., Simon's bounded rationality (1957), Etzioni's mixed scanning (1967), and Jone's process-type solutions (1977: 6)]. Coleman (1980: 347) has argued 1) at the level of the research design, attempt is made to identify multiple and conflicting intents among policy makers, 2) evaluation results which have different policy implications are scrutinized through secondary analyses carried out by different researchers, and 3) evaluation results are made public and can be appropriated and used by any stakeholder and different actors involved in a public issue.

Analysis within this approach draws on the conceptual/methodological input of research to assess specific procedures of policy formation and implementation. Wildavsky has analyzed the limits of rational, comprehensive policy making (1964: 146-157, 178-180; 1979), exposed the value-laden aspects of cost-benefit analysis (1966; see also Fischoff, 1977), and argued that resources and objectives, means and ends are dealt with together (1979). Others have examined agenda setting and evolution of policy issues (Bachrach and Baratz, 1963), and factors affecting policy implementation (Pressman and Wildavsky, 1973).

Although the rational and incremental approaches have been and remain the dominant, prototypical models for public policy, which can be said mutually exclusive, a large body of recent literature attests to increasing concern over the ability to resolve current public policy problems, and to an uneasiness over their potential to adapt successfully to the looming challenges of an increasingly complex and uncertain future society.

5. The General Systems, Cybernetic Approach

The researchers/analysts in this category have argued problem structuring and interactive planning rather than problem solving (Ackoff, 1974: 26–33; Dunn, 1981a: 97–139; Weilenmann, 1980). The epistemology is post-positivism which is profoundly different from reductionism, logical positivism and empiricism. To investigate organized wholes, systems epistemology requires many new categories of interaction, transaction, organization, teleology as well as a view of knowledge as an interaction between the knower and known and data as theory-based. They directly address complexity, circularity, variability and uncertainty, by using information theory, communication theory (Deutsch, 1966), general systems theory (Bertalanffy, 1974; Buckley, 1967; Churchmann, 1968; Jantsch, 1975; Miller, 1978; Weinberg, 1975), and cybernetics (Ashby, 1963; Weilenmann, 1977). General systems theory has evolved with three main aspects: systems science (which focuses on mathematical systems theory), system technology (which concerns the many techniques, models, and mathematical approaches), and system philosophy (which seeks the reorientation of thought and world view using system as a new scientific paradigm) (Bertalanffy, 1974: 11–20).

Policy research within this approach focused on the investigation of the isomorphy of concepts, laws, and models, on the encouragement of development of adequate theoretical models in fields that lack organized wholeness, on the minimizing of theoretical duplication, and on the promotion of the unity of science. They have emphasized that social systems continuously self-organize and self-realize themselves through processes that are themselves self-realizing and self-balancing (that is, learning system, see Deutsch, 1966; Ackoff, 1974; Weilenmann, 1980; Dunn, 1981b). They have tried to build such "new models" as Deutsch's 'a crude' model (1966: 258), Beer's 'brain' model (1981), and Weilenmann's 'social-systems cybernetic' model (1980), which emphasize the importance of totality and inner structure as well as information-processing and feedback. They also have addressed such problems as wisdom, will, value, consciousness (see, e.g., Deutsch, 1966), and socialization (Hage, 1974).

In order to capture the complexity, uncertainty and messiness of the ill-structured policy problem, there arises the need for a deep understanding

about the functionings of social system. Jantsch (1975: 8-12) suggests three level of inquiry in his dynamic system model: 1) the rational (outside interference with the system by imposed control), 2) the mythological (regulation from inside based on the negative feedback and homeostasis, with competition emphasized) and 3) the evolutionary (focusing on the unfolding of wholeness, utilizing energy in many ways through positive feedback, and emphasizing internal or coordinative factors of evolution). He described five systems principles: 1) causality (mechanistic models), 2) probability (statistically preprogrammed behavior, mechanistic systems models), 3) vitality (life-preserving behavior, adaptive systems and contingency models), 4) volition (moral human action, inventive or humanistic systems approaches) and 5) creativity (a crisis provoker, morphogenetic mutation of human consciousness through formation of new cultural paradigms and complex systems of such paradigms). These five principles form a hierarchical, stratified, interacting order and the design effort itself becomes the design of a dynamic system of approaches covering all these modes.

The perspective of cybernetics is quite useful in integrating a lot of existing social science theories and in dealing with the complexity, uncertainty and dynamics of policy problems. Its epistemology concerns about the process from egg to hen, rather than that which is the first (that is, presupposed adoption of a frame of reference, expectation or theories). It views a system made of interrelated processes and structures and analyzes the system's information processings and feedbacks in relation to its goals. Cybernetics deals with the idea of coordination, regulation, and control and how the system's parts exercise normative control (e.g., will and consciousness via information screening and feedback with socialization) of the system to achieve goals (Weilenmann, 1977: 61). Policy making is viewed in cybernetic terms as the steering of society.

Weilenmann's 'social-systems cybernetic model' directly addresses the complexity and messiness of policy problems, by using such concepts as information, communication, generic and activity subsystem (Weilenmann, 1980; Deutsch, 1966, Miller, 1965: 193-237 & 1978), and coupling (the fact-value integration) and requisite variety (Ashby, 1963: 48 & 204-206). He argues metavalue (values about values) and a multimethod, multilevel approach (Weilenmann, 1980: 52 & 81-98).

Theories such as catastrophe theory (Thom, 1972; Zeeman; 1979),

dynamo computer language and simulation (Forrester, 1961, 1968) and 'The Limits to Growth' (Meadows et. al., 1972), Graph theory (Harary, 1965), fuzzy set theory (Bellman and Zadeh, 1970; Cavallo, 1979), and several forecasting methods and techniques [such as policy delphi (Linstone and Turoff, 1975), and social impact assessment (Finsterbursch and Wolf, 1977) as well as network analysis (Rogers and Kincaid, 1981), reflect general systems, cybernetic perspectives.

Analysis within this approach operates under far different assumptions than analysis in either the rational, comprehensive or neo-pluralist, incremental approach. The emphasis is on the identification of a system of problems, value-creating decision-making, serial choice as a process of learning rather than (or as well as) adaptation, and strategic as well as tactical problems. At the same time, the analysts are actively involved in problem structuring and goal setting. This involvement is readily acknowledged as a normative, value-laden activity. They are concerned with the values of man in relation to his world; reality is not found in the positivist world of physical particles governed by chance, but in a world of symbols, values, and social entities and cultures embedded within the hierarchy of organized wholes. It is an interactive planning. Also, such techniques and theories mentioned before are applied.

6. The Value-Critical, Learning-Adaptive Approach

The researchers/analysts in this category have argued problem structuring rather than problem solving, value-critical rather than value-neutral (descriptive) or value-committed (normative) (Dunn, 1980-81: 519), and learning. (Normative analysis is limitted to the methods of formal logic and verification, ruling out the informal discursive processes that mediate the construction of social reality (Fisher, 1980:3).) This approach is the newest and perhaps most amorphous. The epistemology is post-positivism, the origin of which is phenomenology. The emphasis is on the intersubjectivity or consensus and the fusion of knowledge into action (action requires purpose, confidence and results) or action-oriented goal change. In other words, policy analysis and decision making are subjectively viewed as meaningful forms of activity by the policy actors themselves, and the central focus of planning must be on man's psychosocial development through interpersonal

transaction or intersubjectivity. They have argued a participant and transactive planning (Friedmann, 1973), by shifting the focus for learning to the periphery of the system rather than the center (Schon, 1973). They view planning as a form of social learning; learning from experience, rather than being bounded it. Learning requires the capacity of policy making system (Dunn, 1981b: 41).

Research/analysis within this approach attempt to devise methodologies for assumption surfacing (Mitroff and Emschoff, 1979), formulating criteria for introducing and critically assessing ethical/valuative claims [e.g., MacRae's meta-ethical guidelines (1971, 1976), Fisher's meta-normative criteria (1980), argumentation (Toulmin, 1958; Dunn, 1982; Mason and Mitroff; 1981), and value-laden policy issues (Tropman and McClure, 1980-81: 604-611)], and identifying sociocognitive framework (Dunn and Ginsberg, 1983). In identifying fact-value distinction, Michalos (1980-81: 544-552) has pointed out some possible pitfalls, and suggested to forget about the fact-value distinction and get on with the pursuit of truth and the performance of good deeds. However, I am somewhat skeptical to this view. What is the truth? Is there no relation between science and ethics? What is the second-order change? Analysis within this approach uses methods and techniques patterned after the conceptual framework discussed above. Mitroff's strategic assumption surfacing testing technique is the most illustrative example (see Mitroff and Emschoff, 1979).

7. Epilogue

As far as the approaches are concerned, the first two are dominant and the last two are emerging. There is growing conceptual overlap between general systems, cybernetic approach and value-critical, learning-adaptive approach. Even though they have substantially different disciplinary origins and orientations, the inquiring and more open epistemological nature of both approaches has resulted in a mutual atmosphere of critical exploration an inquiry that appears to be bringing them closer together. They both emphasize flexibility, inquiry, learning, creativity, and personal and value involvement in an ecological and dynamic context. This fact is particularly important since the basic dilemma of modern societal planning (consensus versus control) can be represented by the initial orientations of these two

approaches: 'control' (cybernetics) and consensus (value-critical). Combining and developing these two approaches could give these approaches a much stronger synergistic potential for providing a concept of the crucial public oversight role needed to overcome the long-resolved societal control versus democratic freedom dichotomy. As far as research and analysis are concerned, the relationship between two 'phases' of policy analysis should be best viewed as a dialectical 'moment' (Dunn, 1981a: 54; see also Fairweather and Tornatzky, 1977). What is needed is the continuous monitoring and evaluation of policies over time by integrating two forms of analysis.

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