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The Economic and Political Context of Cost-Benefit Analysis: A Suggested Modification of Method

1. INTRODUCTION

Economics and politics each have their own logic. But logic operating on economic and political premises yields different reckonings of appropriate policy-making. In this paper, I criticize the application of economics to policy, and develop a perspective by which economics is applicable to a given policy decision, not by the logic of economics, but by the logic of politics. I survey and describe a spectrum of economic policy analysis techniques based on an economic logic that generates one step from another. Each step is a transformation, usually simply a generalization or special case, of an adjacent step. In addition to showing the ways in which one policy analysis is derived from another, I make a claim for a need for comprehensiveness, which implies that at times a more general form of analysis should be used. If this is impractical, a particular stage of economic policy analysis should be embedded in the next more general stage so as to situate it in an economic context and make its choices more explicit and perspicacious.

Although I start with the simplest technique and successively generalize to approach more comprehensive techniques, the reverse procedure could have been used. In that case, I would have started with a form of input-output analysis and programming, specified certain restrictions on the procedure that, if adopted, would lead to a "generalized" cost-benefit analysis, specified further restrictions on the procedure that would lead to a "special" (ordinary) cost-benefit analysis, and finally, specified restrictions on a special cost-benefit analysis that would yield cost-effectiveness

analysis. Each form in this string is a special case of the form preceding it. As is frequently the way with special cases (as I point out in my later remarks on politics), they are usually more practical and more useful than general cases. On the other hand, sometimes so much information is left out of the special case that it is less applicable to the policy at hand. The choice of which sort of economic policy analysis should be used for a particular policy problem is of the highest delicacy and importance; the results of the policy analysis can only be interpreted in the context of which sort of analysis is chosen. Economic logic and political logic work in orthogonal directions, which may lead to some confusion about the appropriate technique for any given policy decision.

2. THE ECONOMIC CONTEXT

Consider the subset of policy-making techniques that can be referred to as economic. Some of the properties of this subset are maximization, quantification (by quantities and prices), trade-offs, the presuppositions of welfare economics (of which policy economics is, so to speak, the applied version), and the procedures and presuppositions of modern neo-classical economics. The spectrum of economic policy techniques that I consider here includes cost-effectiveness analysis, "special" cost-benefit analysis, "general" cost-benefit analysis, and applications of programming and input-output analysis. I move from the most restricted form of economic policy analysis to more general forms, and finally to input-output analysis capable, theoretically at least, of the most comprehensive sort of economic policy plan. I leave the examination of political logic (which is characterized by a push toward evermore specific kinds of decision making, whereas

in economic policy analysis the push is toward evermore generalized forms) until after the display and investigation of economic policy analysis and its logic.

Let us suppose that we have occasion to contemplate a particular public policy and consider some economic policy analysis. Perhaps we are criticizing a policy in play, constructing budgetary allocations, or contributing to the planning of future policy. Let us then specify a particular sort of policy, such as supported work. Under supported work, part of the money wage the worker gets comes from the government. In general, it is assumed that the worker may not be as productive as required to earn that wage in the private sector or in ordinary public sector jobs.

The point of cost-effectiveness analysis is to hold objectives and their attainment constant and find the least costly means of doing so. A cost-effectiveness study of a particular supported work project would try to find that arrangement in the real world, which in an era of greater sexual naivety and military bluntness could be thought to bring in "the most bang for the buck." Such a procedure would include a spelling out of objectives (such as training, crime reduction, and actual production), and would compare a number of different fashions to achieve them.

Cost-benefit analysis may be thought of as the first transformation or generalization of cost-effectiveness studies, occasioned by not taking for granted a particular set of objectives. Thus the extent to which the goals of the cost-effectiveness study are achieved become the benefits of a cost-benefit analysis. If the ratio of cost to benefit is less than

1, it is a good deal. Under cost-benefit analysis, questions of policy are refracted through the model of a cost-benefit equation, which translates a possibly more general policy question into "How much does it cost?" (the cost) and "What are we getting?" (the benefit) to form the ratio ("Are we getting more than we paid for? Is it a good deal?"). The benefits in a supported employment program might include increased outputs and increased human capital formation. In general, the costs are the opportunity costs required to underwrite the policy that, theoretically, could be spent in another program and in fact are spent in other ways, programmatic or not. As such, the costs of the program in place are marginally different from the costs without the program. For reasons that will presently become clear, I refer to such a cost-benefit calculation as special cost-benefit analysis.

Special cost-benefit analysis is generated from cost-effectiveness analysis partially by expanding techniques to meet an expanded range of policy decisions, an expansion which requires modifications in the cost-effectiveness schema, primarily having to do with the pricing of benefits. Affixing the correct price to benefits is a matter of the utmost skill in cost-benefit analysis. It is a move allowed by the existence of a market that either establishes prices or indicates usable shadow prices. Further, cost-benefit analysis requires some notion of intersubjective utility comparison, if only in the application of the Kaldor-Hicks criterion. In general, since special cost-benefit analysis addresses a situation of some sort of market failure that it seeks to redeem by the public policy under consideration, the effect of the analysis in the

assignation of shadow prices is to describe the situation of market failure in terms of an imputed market. The effect of the policy being analyzed may well be either to have an imputed market internalize the externalities or in some instances to have the real market cope with the situation where the policy from mechanisms of authority and the market has internalized the externalities that antedated it. All three of these moves are anything but trivial; they make assumptions quite beyond the range of neoclassical economic analysis alone, extending into welfare economics and, insofar as a policy is analyzed with some hope of being real, realized into politics as well.

If the cost-benefit analysis is done well, it will expose various problems that lie beyond it, and reveal many of the economic assumptions comprehended in supported employment policy. Thus, it will reveal that a supported employment policy requires resources that might be spent in other places and may suggest that the supported employment policy be compared to other programs, such as unemployment insurance, disability insurance, and welfare, which presumably fulfill the same objectives, although perhaps at a different price.

It is quite likely that the perceptive cost-benefit analyst will reckon that the variables of the analysis are not ideal, the measurements not precise, and that there are "immeasurables" (such as worker satisfaction), but that the cost-benefit analysis is the sanest approach to the problem at hand. Although the answers are not gospel, they are the best we can do (quantitatively) and show every promise of being far better than any other sort of answer. The time available to accomplish

the policy analysis is "real" and limited, and a special cost-benefit analysis may indeed be the instrument of choice given constraints of time and resources. In a reflexive mood, a special cost-benefit analysis might present itself as a cost-beneficial method of analyzing a particular supported employment idea.

A further generalization along the spectrum of techniques for economic policy analysis is what I call general cost-benefit analysis. In a general cost-benefit analysis the number of costs and benefits is expanded from the surely-relevant to the possibly-relevant, immeasurables are enumerated with some care, and interactions between various costs and benefits are considered, as are interactions between various programs. Any cost-benefit analysis considers only a finite number of programs; anything else would be impossible. In a general cost-benefit analysis, however, this finite list of possible programs is greatly expanded from the number usually considered in a special cost-benefit analysis. Strictly speaking, in accord with welfare economics, the costs and benefits should be computed for society as a whole. In a pluralist political system, such categorizations may be less relevant, however, than calculations of the costs and benefits for different actors, such as for society, the government, the taxpayer, the program recipient, etc. Accordingly, a general cost-benefit analysis includes many such actors and calculates the cost-benefit equation for each. None of these generalizations of special cost-benefit analysis involves any expansion in basic assumption.

It may be that although the odds of any one variable changing the analysis are slim, the odds of the analysis being changed by many new

variables are considerable. But usually, the ascension to a more generalized level of cost-benefit analysis (for the distinction between special and general cost-benefit analysis is not one of either/or but rather one of degree) is unjustified in the practical world of public policy where time is a resource of all too finite duration. The time of a policy analysis is not the time of theory and contemplation, but the time of the world, society, and politics. Some of the particular questions posed for special cost-benefit analysis, such as the role of immeasurables, precise definitions of categories, and distribution of policy benefits, are questions that should only be asked with a full realization that unnecessary complexity is a sin equal to oversimplification. Further, it should be recognized that policy analysis, of which cost-benefit analysis is an economic form, is an endeavor of the highest seriousness in our society, which although it may seem medodramatic can involve questions of life and death, happiness and unhappiness. Cost-benefit analysis is hardly academic; it is practical in every sense of the word.

Bearing this in mind one should still put some questions to special cost-benefit analysis, which may prompt a generalization. These questions have to do with the number of policy alternatives considered, the number of costs and benefits under each, a comparison of different program options with each other, the proper role of immeasurables, and a consideration of the various actors to whom the costs and benefits may accrue.

The choice of policies for consideration in a special cost-benefit analysis is of the highest importance. It has already been noted that any list of policy options is necessarily finite (even though there may be

an infinite number of graduations within each policy). Thus, it is theoretically impossible to list every policy. Although any policy may theoretically be a candidate, we do not live in a world of pure theory. Further, such theory as may make a policy a candidate is not given from within cost-benefit analysis but is given from without, by the psychology of the analyst, the society of which he is part, and the political cross currents and bureaucratic pressures that may have demanded the cost-benefit analysis in the first place.

A cost-benefit calculation may be of a single policy option: If costs are less than benefits, fine; if not, discard the program. If only one policy is considered there may well be other policies with higher benefit-cost ratios. And even as one approaches a higher degree of generality with more than one policy considered, it is always possible, given any finite list, to made additions. It seems clear that in calculations of supported work programs there are many things that one would not include, such as the cost-benefits of various water projects. Then again, one might include them if the supported work programs had to do with hydroelectric power, irrigation, and making rivers navigable. The choice is never all that clear. It is based not on the cost-benefit analysis itself, but is interfaced with the personal characteristics of the analyst, society, and politics.

The benefits from a particular program may not have been fully considered, either out of ignorance or because they represent spillovers out of the territory of the policy under consideration. Thus, although a supported work project may be cost beneficial it may not be as cost beneficial as other projects, such as compulsory education, transfer payments,

or macro-economic full employment policy. Thus, although 55 miles per hour speed limits may or may not be cost beneficial for the transportation industry, they are likely to be quite efficient in saving lives. Cost-benefit analysis, a technique which deals with first order externalities, may find it troublesome to deal with such potential spill-overs, or second order externalities (externalities created by the cost-benefit analysis).

The programs that do not appear in a cost-benefit calculation simply do not exist for the analysis and to the degree that the analysis influences the policy-maker, directly and indirectly, for the world of social policy at all. Which policy is chosen for analysis, then, is property neither capricious, irrelevant, nor arbitrary. In so choosing one says defacto that all other conceivable policies are not worthy of analysis (either in one's own mind or in the mind of the policy-maker who may have set the terms for the analysis). It is entirely conceivable that policies with a higher benefit-cost ratio than those under consideration exist. Which policy is on the agenda is a question of immense importance. The cost-benefit analyst may say that this is not his or her business: But perhaps it is, the form of the cost-benefit calculation having possibly conditioned the policies under consideration in the first place. This is not to criticize the cost-benefit analyst, but rather the process of policy itself. All of the terms of the analysis must be taken into account.

Alternatives never thought of can hardly be considered. And alternatives thought of but deemed impractical will never get a chance to prove their practicality. Since cost-benefit analysis can only help decide among possibilities already given as to which of a set of known alternatives is likely to be the best for society, given its tastes, it should be coupled

with a mechanism that brings in a large number of alternatives to be considered. Any finite set of alternatives is a subset of a potentially larger set of alternatives. In cases where the cost-benefit analyst works with political givens, formal mechanisms should be established to engender a dialogue between the analyst and the policy-maker. As a first approximation, cost-benefit ratios of different policies must be compared so as to reveal not only that a program is efficient, but the most efficient among a wide range of alternatives. It may in fact not be necessary to quantify the costs and benefits of every policy. Frequently inspection will reveal some as clear losers and others as contenders.

Cost-benefit analysis manages to compare apples to oranges by giving each a price in dollars. Immeasurables are things that it is impossible or difficult to give a dollar price to. There are measurements of social integration, happiness, work satisfaction, pride, etc., which may be as accurate as some measurements by dollars that appear in cost-benefit equations. Recall that in general the prices attributed in a cost-benefit calculation are shadow prices, the prices of a mythical market. In fact, cost-benefit analysis is applied in instances of market failure, hence, particularly given an absence of knowledge of why the market failed, there may be some or much reason to worry about the accuracy of the prices. In the recent past, finding quantitative social indicators to measure such things as national integration, anomy, and various personality, political, and sociological variables has advanced analysis tremendously. Of course, these indicators are not entirely accurate, and are even less frequently cardinal (prices, no matter how inaccurate, are). However, the basic point is that often there is no a priori cause for assuming that a price will be much more accurate than a suitably chosen nonprice measurement. There are immeasurables, such as beauty and justice,

which may not be measurable at all. Cost-benefit analysis does not distinguish between these two sorts of immeasurables, for cost-benefit analysis measures means price. Although frequently it is impossible to assign a price, this does not mean that things without price do not matter (unless they do not vary across the relevant options; then only that which can be priced may matter). Responsible analysts and decision makers must consider immeasurables.

Cost-benefit analysis examines the economic efficiency of a policy. In the face of many immeasurables of importance, economic efficiency may not be the central problem. The existence of important immeasurables may call into question the very applicability of cost-benefit schemas, and even the mode of analysis. But because of the structure of cost-benefit analysis, immeasurables are often placed off to one side and ignored. More sophisticated cost-benefit analysis says that immeasurables must at least be worth as much as a specified function of the measurables in order to make the policy worthwhile. But even so, immeasurables are lumped together and put aside.

It may well happen that immeasurables are to some extent capable of dollar valuation. Thus one may measure the beauty of a painting by the price it fetches, the job happiness of the worker by the money he is willing to give up for a satisfying job, etc. Such dollar valuations sometimes work and sometimes do not. More frequently, they kind of work. (Indeed, the attribution of prices to any good in a cost-benefit calculation usually only kind of works.) Sometimes immeasurables are important, and sometimes not. In either event a cost-benefit calculation is a mode of analysis that segregates the immeasurables (usually nonpriceables), and by claiming correctness denigrates their importance.

A difficulty with immeasurables is that it is possible to include so many of them. Thus a supported work program may be worth something to a grandmother in another city because it puts to work the husband of her daughter's friend's friend and the happiness happens to pass that way. It is easier to add immeasurables in this fashion than measurables because there is a tendency to be sloppy with qualities that do not affect the outcome anyway. But in fact, as much care should be used with nonpriceables as with priceables. They should all be listed and a judgement made from outside the framework of cost-benefit analysis as to the validity of the analysis itself in their presence. Judgement, of course, comes largely from outside the framework of the cost-benefit analysis itself, being personal, social, and political. Thus, when judging an employment policy we should not bother to measure the market price of trees, birds over three feet, nor diamonds, unless we are interested in programs concerned with paper, ostrich farms, or diamond cutting. To immediately suspect the nonpriceable is no more logically or methodologically justified than an immediate suspicion of a priceable. The nonpriceables must be thought about, dutifully listed, and contemplated. The judgement of whether to disregard them, say that they must be worth a certain amount, or say that they invalidate the cost-benefit analysis is not achievable in the logic of cost-benefit analysis itself, but is a judgement that must be made from outside of the cost-benefit framework.

Cost-benefit analysis is valuable in specifically enumerating the nonpriceables that have to be taken into account in the analysis of a policy, putting them into the same equation as the measurables, and submitting both to the gaze of judgement, which is capable of rejecting the immeasurables or the cost-benefit analysis. The reason for either

decision shows something about the policy problem. Although a cost-benefit analysis may be inadequate for the problem at hand, the analysis illuminates the problems that lie beyond it, sometimes with an uncanny precision.

The astute cost-benefit analysis asks more questions than it answers. Both the asking and answering of questions are its consummate services for an economic system in need of a rational decision. Who gets the benefits? Who bears the costs? The answer to both questions is traditionally rooted in welfare economics, of which cost-benefit analysis is the action arm. Thus, the benefits flow to society, and society bears the costs. But problems rarely present themselves to a government in such societal terms, frequently arguments about redistribution carry more political weight than those about efficiency, and although it may be possible to produce pure private goods, such as apples and oranges, provided one has an organic farm, goods in general are rarely so pure and the sort of goods usually discussed in public policy are never so pure.

Thus, frequently policy will generate benefits for other than the target group. Are such benefits to be reckoned as benefits? And if so, how are they to be discovered? As far as the costs go, in general they may be borne by the taxpayer rather than by society as a whole, and it may make sense to see what the cost-benefit calculation looks like for the taxpayer. Given the nature of our pluralist politics, it would seem wise to consider how the cost-benefit calculation appears to various groups relevant to the particular policy still being considered.

The above difficulties in special cost-benefit can be addressed with the construction of a general cost-benefit schema, for example in relation

to an analysis of disability policy. There is a wide range of conceivable programs, some with reasonably great spillover, and in another dimension, the cost-benefit picture as it appears to different actors (such as taxpayer, recipient, society) should be considered. Accordingly, Table 1 presents three orthogonal cross-sections of a matrix in three-space, the dimensions being program, actor, and impacts. The impacts (benefits and costs) form a very long list of which even the sublist presented here is longer than common practice. It should be even longer, of course. Further, there is a list of interaction terms. Immeasurables are listed and not lumped together.

There is a sequence of specifiability in connection with each cost and benefit. Thus, for example, a typical benefit, B_n, can, and in general should, be just listed. It is a good idea to know what the variables are even if there is nothing more one can say about them. At a greater level of specificity, it is frequently possible to fix a sign without necessarily having an idea of magnitude. And it may be hard to list, although not to affix a sign to, interaction terms.

At the highest level of specificity we would like to assign prices to costs, benefits, and interactions as they appear to various actors for various program options. Sometimes the variables in a special cost-benefit analysis have been chosen with regard to the ease of their quantification. The main value of the general schema may consist in indicating what may happen if the logic of the special schema is pushed one step further, in providing a context for the special schema, and in suggesting other policy possibilities.

Table 1

Benefit-Cost Matrix

Program: Sheltered Workshop

	Benefits															Costs							
	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15...	C1	C2	C3	C4	C5	C6	C7...	I;...
List																							
+1-																							
Interactions																							
Quantification																							

Actor: Individuals

Program	Benefits															Costs							
	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15...	C1	C2	C3	C4	C5	C6	C7...	I;...
Rubella Immunization																							
Sheltered workshop: turnstile																							
Institutionalization																							

Program: Rubella Immunization

Sector	Benefits															Costs							
	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15...	C1	C2	C3	C4	C5	C6	C7...	I;...
Individual																							
Society																							
Government																							
Firms																							

Note: See key.

Benefit-Cost Key for Disability Program

B1 - present value of increased productivity in market activities, as measured by:

earnings - individual

aggregate earnings - society

net tax receipts - government

profits - firm

B2 - present value of increased consumption or investment derived from increased nonmarket productivity

B3 - present value of economies due to altered living arrangements (e.g., increased probability of marriage times one-half the average savings of two people living together compared to each living alone)

B4 - present value of decreased probability of illness or disability - own saved medical costs and value of time not lost

B5 - present value of increased normalization of home life on other family members, as measured by present value of increased income and/or leisure

B6 - present value of reduced insurance premiums including transaction costs (likely to be most important to the government)

B7 - increases in competence, socialization, identification, status, political participation, as measured by willingness to pay

B8 - happiness

B9 - life expectancy

B10 - satisfaction from other accomplishments

B11 - anxiety reduction

B12 - utility or disutility from decreased discrimination

B13 - political allegiance

B14 - present value of decreased probability of litigation

B_n

C1 - net foregone productivity of individuals participating while in program or cost of treatment

C2 - additional transportation costs

C3 - direct costs of program - instructional, administrative, overhead, material and equipment, custodial, etc.

C4 - political costs

C5 - increased salary, wage rates, or fringe benefits necessitated by program

C_n

I_j - representative interaction term

Immediately evident from such a general cost-benefit matrix is that special cost-benefit analysis makes a number of assumptions that allow it to interpret the problem of evaluating a cost-benefit ratio at all. One assumption is to simplify the general problem, which is one of finding the best policy mix. In general, there is no reason to suppose that any particular policy by itself is an optimal solution; it may well be that a combination of possible programs in some definite proportions may be optimal. (This problem begins to appear like a programming problem in which certain functions are maximized over a linear space.) It is possible that interactions of various policies would prove significant. Thus, the interaction of programs affecting the supply and demand sides of employment for the disabled are likely to be greater than either alone.

If a general cost-benefit matrix leads us to such realizations it has already performed a valuable service. Another service is the guidance it provides to any special cost-benefit calculation. The astute cost-benefit analyst has a number of possibilities in mind when conducting a special cost-benefit analysis. Many of these possibilities are explicitly indicated in a general cost-benefit analysis. Since one of the main virtues of cost-benefit analysis is to put down all of one's assumptions and intuitions into a replicable and perspicacious form, it seems that the decision making process could only be made more rational by explicitly putting down the framework of the general cost-benefit matrix of which the special cost-benefit matrix is a special case. Frequently, the general form will influence the actual calculations of the special form; but only rarely will it be cost beneficial and appropriate to use the general form.

Such occasions will be ones where enormous investments in policy analysis are warranted, for the general form is obviously far more unwieldy than the special form. The important principle is to have the general form explicitly laid out so that the cost-benefit analyst can conduct a dialogue between it and the special form, thus enriching the special form, informing its conclusions, and providing a context in which it can be interpreted and applied to the formation of public policy.

It is thus fully in keeping with the spirit pioneered by cost-benefit accounting, cost-effectiveness studies, operations research, and systems analysis, that I suggest that the generalized cost-benefit matrix be included as an explicit context in which the special cost-benefit accounting takes place: namely to render as much of policy analysis as possible clear and accessible to criticism, improvement, and agreement.

Cost-benefit analysis is an explicit and systematic policy analysis that replaces vague generalities with specifics and in so doing reveals new problems. Incorporating a generalized cost-benefit framework, if only to lay it out, helps the analyst make judgements. When the generalized cost-benefit analysis is used to illuminate the special case it will not, in general, be necessary to specify the values of the costs and benefits but merely to list them; however, at times it may be a sensible investment of time and energy to decide if they are positive or negative. Such decisions depend on central questions such as the sort of policy contemplated and its societal context. The special cost-benefit analysis should be seen as a simplified practical adaptation of the general form to the pressing issues of social policy.

The generalized cost-benefit schema can be thought of as a programming problem performed not on the technical relations of production but rather on the system of market exchanges, which can be made sufficiently large so as to encompass any cost-benefit analysis. Cost-benefit analysis deals with both the supply and demand sides of the equation, which determines price in real or imputed markets.

Let us suppose, on the other hand, that we have prices exogenously given, as in a centralized economy. Here prices are generally determined by politically established priorities. In this sort of economy we could look at the input-output matrix only in regard to the exchange ratios and perform a programming optimization on it. With prices fixed exogenously, the generalized cost-benefit system becomes equivalent at its extreme limits to a centralized economy. Of course, in general, prices may not be exclusively determined exogenously and may in fact be imputed by a mythical market different in kind although not in effect from the mythical market of cost-benefit analysis.

With the appropriate transformations, then, we have been able to generate from cost-effectiveness analysis, special cost-benefit analysis, and from that, general cost-benefit analysis, which is in turn theoretically transformable into programming problems that, with yet further transformation, become the systems of allocation that exist or are supposed to exist in centralized economies. It is in the logic of economics that each step can flow from the last with a modification of assumptions.

In mixed economies the necessary assumptions for special and general cost-benefit analyses are made by assuming the apparatus of welfare economics, which is not part of economics proper. It is conceivable also

that with various additional assumptions we can generalize cost-benefit analysis into the apparatus of the centralized economy, perhaps significantly, in that the effect of the cost-benefit frameworks has been to provide an alternative scheme to the allocation of nonmarket goods where the market economy has run into trouble. Cost-benefit analysis, then, can be seen as a conserving technique designed to protect the liberal market economy from the hazards of inefficiency on the one hand and centralized planning on the other.

3. THE POLITICAL CONTEXT

There is an implacable difference between politics and what we have come to call "rational" public policy analysis. In the construction of public policy one can look to economic policy analysis, systems analysis, operations analysis, intuition, bargaining, and other techniques, and can seek substantive guidance. It is politics that determines the level at which cost-benefit analysis is practiced and politics that influences the selection of programs to be analyzed. In centralized economies it is politics that largely sets the prices.

In a centralized economy, the problem of allocation is reversed. Instead of starting with simple transactions, the price of which is determined by supply and demand, and proceeding by increasing generalization to imputed markets for the allocation of nonmarket goods, one starts with political decisions about prices and seeks to make them applicable by increasing degrees of concession to the market. But the logic of both is the same as surely as their direction is opposite.

The logic of politics is completely orthogonal to the logic of economics, which allows easy theoretical modifications from market transaction to centralized economy. The first important lesson about politics is that its logic is embodied, concrete, and situational. Thus, whereas the logic of economics makes each sort of economic decision making process theoretically derivable from another sort, quite the converse is true in politics. The logic of the political is the art of the particular. General political wisdom cannot be moved to each particular instance theoretically. Politics is continually matched up against the realities of the social world, of the changed social world that policy would create, and the gap that lies between is and ought.

There may be some doubts as to whether or not economics is a science. With politics, despite the nomenclature of academic departments, there can be no doubt: It is not a science. At its best, politics is high art; at its worst, it is an evil and corrupt exercise. Even when people consult a body of law to guide them in political action, it is a pre-scientific consultation. Thus the Hassidic Jew is capable of the most exquisite political action, always guided by and derived from Torah, the exquisiteness of the politics coming from an active dialogue conducted between Torah and a concrete political situation; the same can be said of American society and the Constitution. Likewise, Machiavelli's sage prescriptions for political action used history much like many law schools use the case system. The political art lay in connecting the appropriate example to the appropriate action.

But none of these are scientific, nor even quasiscientific in the sense in which economics is. All start from the existential situation

of a concrete political problem and look for guidance in Torah, law, or history. To be sure, there are some (like Hobbes and Bentham) who thought that it was possible to construct a science of politics, and there are some today who are under the same illusion. One can look for assistance in science, such as substantive advice on how to build an atomic bomb or pursue countercyclical economic policy, on the nature of the Soviet Union and, for a Soviet politician, the nature of the United States. All these matters have to do with substance. But it is a risk to put an embodied political process in the hands of any formal mechanism. Few practicing liberal politicians can afford to let their actions be much influenced by the formal advice of welfare economics and cost-benefit analysis. Inevitably, when confronted with such a formal technique, the politician makes certain choices having to do not only with the particular problem at hand but with the particular sort of advice applicable to it. Thus a Communist politician may consult Marx, a liberal politician may consult cost-benefit analysis, but such consultations are always made by politicians in concrete individual political situations.

The logic of politics is to bring wisdom, power, and experience, along with some substantive and perhaps even formal knowledge to bear on concrete political situations. Quite different is the logic of the economist, which allows one to derive one sort of economics from another merely by a transformation, an addition, or an alteration in a quasiformal calculus. With the politician such transitions are always refracted personally through concrete political situations.

There is ample room here for a more complete understanding of economic analysis, and for a more informed selection among various cost-benefit approaches when cost-benefit analysis is indicated--a decision made in the first and last analysis by the politician with concrete political demands. The cost-benefit analyst should look upon himself as a technician who may be of assistance to the policy maker. There will be times when cost-benefit analysis will have a contribution to make to politics, and other times when cost-benefit analysis will be inapplicable. Like any other sort of policy analysis, cost-benefit analysis is not a science: It is a rational, ethical calculus. Its import is to realize value in the world of fact. It arises from demands outside itself and is used in the same society that demands it.

In the near future, one can expect to see policy making become ever more rational. Indeed, the danger is not that policy making might be irrational--those times seem long past--but that it might be guided by a limited and formal rationality, pretending to express and control all of public and private life. The problem now is that economics and other formal techniques of policy making do not become part of the concrete, lived political process, but that their abstractions come to govern the relationships of men and women.

There certainly is a place for cost-benefit analysis as our economy grows by leaps and bounds and as the complexity of our society bounds and leaps away. In the end, cost-benefit analysis must be practiced as sophisticatedly, rationally, and accurately as possible. This involves embedding it in the context of a more general form of cost-benefit analysis to reveal its assumptions. It also must be part of another (noneconomic) context--the context of society, people, and politics.