Use of Social Science Data for Policy Analysis and Policy-Making

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SOCIAL SCIENCE DATA, EMPIRICAL RESEARCH, and social theory have always been used in some form or another for public policy formulation. Theories and data describing the behavior of people, economic systems, and nations were used by the first social organizations to develop public policy. The oldest and still most basic social data bases are the census and vital statistics. The collection of census information is an ancient practice. The Old Testament documents its use (Exod. 30; Num. 1). In the eighteenth century the framers of the U. S. Constitution (Article 1, Section 2) saw fit to provide for a regular decennial census. With the rapid development of the industrial revolution in the latter part of the last century and the early part of this century, observational data about the consequences of industrial development, population changes, and mortality were collected through the census, vital statistics, and ad hoc local studies. Social reform movements, state government, and ultimately the federal government used these data to develop measures such as workmen's compensation, child welfare laws, industrial safety, and even prohibition.

With the advent of the New Deal, the federal government began to assume responsibilities for social welfare that had previously been

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the domain of local communities, states, and private philanthropy. Data from a number of sources were assembled, analyzed, and formed the basis for important legislation. President Roosevelt's special cabinet committee, the "Committee on Economic Security," working through an advisory council of outside experts and a technical board, conducted a major review of data from the census, the states, as well as ad hoc data from the Committee on the Costs of Medical Care, to make recommendations for social programs of the 1930s and thereafter.

The great social welfare push of the thirties slowed during and after World War II. In the early sixties, however, there was a resurgence of interest in social programs, and over the next decade there was rapid development of a plethora of social programs. To measure the achievements of these programs and to identify continuing and changing needs, the federal government gathered data, conducted research, and sponsored research and evaluation in the private sector on a broad scale. By 1980, there were several sizable organizations at the federal level devoted to the collection and analysis of social, economic, and demographic data: Bureau of the Census; Bureau of Labor Statistics; Office of Research and Statistics (Social Security Administration); National Center for Health Statistics; National Center for Educational Statistics; Office of Research, Demonstrations, and Statistics (Health Care Financing Administration). In addition, there was support for extramural research and evaluation conducted by academic faculty from some of these organizations as well as the National Science Foundation, the National Center for Health Services Research, and from programs in specific categories.

Developments in computer technology, paralleling the development in social sciences of survey methodology and regression analysis, have enhanced our ability to handle large masses of data and stimulated the development of further data sources. The rise of new social programs, new data, and new tools of the computer age have spawned a new industry of *policy analysis*. This industry includes numerous planning, evaluation, and policy analysis offices at all levels and parts of federal, state, and local government, as well as profit and nonprofit consulting firms, foundations, and universities. In the 1960s the health policy analysts in Congress and the executive branch could be counted on one's fingers. Today the combination of federal, state, and private policy analysis capability constitutes an industry. While the growth in data sources and its careful use have improved policy analysis and government decision-making, a whole series of issues related to the role of data and social research for policy analysis have arisen.

This essay will explore some of the issues and problems in the use of data and empirical research for policy analysis and decision-making. Particular note will be made of these problems: the imperfection of many data and consequent uncertainties about the effect of policies; the identification and articulation of disciplinary assumptions; and value judgments by researchers and policy analysts. Finally, the roles of the researcher, analyst, and decision maker in describing and using assumptions, research results, and gaps in information will be discussed.

Issues in the Use of Data for Policy Analysis

General Issues

In the health field, the government collects general purpose data mainly through national probability samples, collects data related to specific programs like Medicare, and both funds and conducts health services research and technology assessments. It also draws upon numerous state and private data sources. These activities support and relate to the basic goals of health policy for the federal government—to promote and protect the nation's health. Over the past twenty years, attainment of these goals has presumed a government obligation to assure financial and physical access to care through various policies and programs, and through programs addressed to specific health problems. Through such intervention the government has tried to respect a number of humane and democratic principles—sometimes explicitly, sometimes implicitly. These principles are aimed at doing good and avoiding harm, distributing goods and services equitably, recognizing the dignity and autonomy of each citizen, and respecting a pluralism of values held by different citizens and groups. In this last context a mixed public and private system of financing and delivery of services is promoted. A *reliable* data base is a necessary political condition for determining needs of the population and assessing the consequences of intervention.

More recently, government has also recognized the *ethical* conditions upon which a data base must rest. Legislative, administrative, and judicial decisions have become sensitive to matters of confidentiality and informed consent in the collection of data, as well as its use. The research community faces the unhappy task—call it the "dilemma"—of yielding the certainty of greater statistical confidence in data for the uncertainty of greater social confidence in government or in research itself. But the necessity for a reliable data base, ethically derived, is undiminished.

Ethical problems in the *use* of social science and research data are not primarily problems of conscious or flagrant violations such as dishonesty of analysis, falsification of data, or individual venality. Two categories of problems having subtle ethical conflicts are much more significant. The first concerns the nature and limitations of social science research itself: the implicit assumptions made in the design of studies; the methodological problems of measurement and weighting; and the assumptions used in imputing missing data and in modeling. The second category concerns the use of the data by policy analysts and policy makers. These problems involve the users' limited knowledge of the sources of data and the methodology followed to collect them, as well as of the assumptions used by the analyst in interpreting the data. Policy analysts and policy makers are very busy, often moving from crisis to crisis without adequate time to learn the nuances of the data or assumptions of different analysts, statisticians, and researchers. The following examples will illustrate the problems presented by these two categories.

Problems of Assumptions

A classic example of the problem of "assumptions" is found in the debate between proponents of market competition and proponents of governmental regulation in health services. In what follows, this complex debate will be oversimplified for the purposes of illustration. There is a major political debate about the factors that cause health care inflation and the methods that might control escalating costs. The health care industry is complex and composed of many interrelated parts. It is a service industry that, unlike other service industries, faces choices related to life, death, and disability. The good produced is not merely an economic good, but also involves fundamental issues of social justice. Yet most attention is paid the economic issues;

debates on access to care, content of health services, and form of delivery of services are cast in economic terms. The two poles of opinion in the economic debate are the *competition* school and the *regulation* school.

Most social scientists who propose a competitive model to address the cost problems in health care assume that a free market approach will work in health care, that supply and demand will reach an equilibrium, that prices will respond to the actions and reactions of supply and demand, and the goods will be distributed equitably. This model also assumes the following conditions:

- consumers have enough information to make rational choices;
- suppliers have free entry into the economic market;
- most demand is created by consumers, and demand can be withheld or delayed;
- demand induced by providers can be reduced through economic incentives;
- prices will fall if demand falls or supply increases;
- if consumers directly pay for services (rather than through third-party payers) they will act as rational purchasers—shopping for the best buy;
- supply will expand or contract in relation to demand.

The regulation school, on the other hand, assumes that a medical market cannot operate as a free economic market or ensure equitable distribution of services, for the following reasons:

- consumers can never have sufficient technical information to make truly informed choices; there is no free entry of suppliers into the economic market because of licensure and other constraints related to quality;
- the life, death, and disability results of choice, combined with the need for highly technical information, require that the consumer have an agent represent him—the physician;
- demand is often created by the agent who has an economic stake in providing services;
- direct payment at time of use may influence demand marginally, but it has less than normal influence when the product is related to urgent health needs, or pain;

- direct payment at time of use acts as a barrier to access for some groups, particularly low-income groups.

Scientists coming from different schools will approach the same policy problem, such as controlling hospital costs or ensuring equitable distribution, quite differently depending on which of these sets of assumptions they use. Until recently there were few empirical data to support or challenge either set.

In 1977, the National Medical Care Expenditures Survey (National Center for Health Services Research, 1980), a major study based on a national probability sample, was undertaken to address some of these problems. These data are now being analyzed, and it will take several years to complete the assessment. In a preliminary analysis of "who initiates physicians' visits" the data are quite revealing. On average, physicians initiate about 36 percent of the visits. However, this percentage changes under differing circumstances:

- physicians initiate a higher percentage of total visits when there is a higher-than-average physician-to-population ratio; supply apparently creates demand;
- physicians initiate a higher percentage of visits where there is a higher proportion of third-party payments. Third-party payment apparently affects demand;
- physicians initiate a higher percentage of visits for the elderly and pregnant women. Exogenous noneconomic factors apparently affect demand.

Neither school's assumptions can be entirely supported by the empirical data. For example, although physicians initiated a higher proportion of visits when there was a higher average physician-to-population ratio, the majority of visits were still patient-initiated. While third-party payment appears to influence demand, there are not sufficient data currently available to determine whether the demand equates with need for services, or to what extent price acts as a barrier to service. It would be premature, given the preliminary nature of the data, to use these data alone in making a major policy shift in regard to the supply of physicians in training, or third-party coverage.

While the evidence from the study of expenditures raises policy questions, the data need to be combined with more sophisticated analysis. These data, however, in combination with other data can help in the development or analysis of policy options. For example, in considering continued support of medical education, one of the issues raised is whether government should continue to require an expanding number of medical students. If supply does indeed create demand, then the policy of expansion can be questioned, although the question of whether or not current supply meets the need cannot be answered by these data.

The policy of expanding health professional manpower, particularly physician manpower, evolved during the 1960s in response to two major factors. The first was data that showed widely differing ratios of physicians to population across the country, and perceptions on the part of the public that there was a shortage. The second factor was the concern during the Medicare-Medicaid debates that there would be an increase in demand for physicians' services, once financial barriers to care had been removed. Data showed that the poor and the aged utilized fewer services than middle- and upper-income groups in the pre-Medicare period.

Data and research findings in social policy rarely account for all economic and behavioral variables. Launching large-scale social experiments is generally very costly and raises numerous legal constraints and ethical dilemmas surrounding human experimentation, as well as many methodological issues. Conscious of the uncertain effects of changes in social policy, many analysts and decision makers tend to seek incremental rather than massive changes. There have been and continue to be periods like the mid-1930s, the 1960s, and the current period where large-scale social changes are proposed. These changes generally are the result of political consensus, and, although data and research contribute to the changes, they are not primary factors. The social and economic effects of these changes are not known with precision and may not be fully recognized or realized for a number of years.

Problems in the Use of Data

Once data are available, there are many problems in their use. We all use data every day for a variety of purposes but rarely question the source of the data, or the methodology used to collect, assemble, and analyze them. Although it may not make too much difference if the weather report is several degrees off the mark, or if our monthly telephone bill has a minor error, it can make an enormous difference if the cost-of-living index used to adjust wages and pensions understates or overstates costs, or fails to reflect local, individual, cost differences. Rippling and multiplier effects have an exponentially stronger influence on the cost and operation of some programs than on others.

Public policy decisions rely in part on data from a variety of sources. Often the data do not match precisely the need of the policy maker. Policy analysts and decision makers routinely quote different sets of data, argue mightily about accuracy, validity, and interpretation, and constantly deal with conflicting results and uncertainty.

Problems of data use arise at several levels. Users, be they policy analysts or decision makers, must be aware of the:

- *methodology used to collect the data* (reliability of the sample, the nature of the questionnaire, and response rates, etc.);
- *adjustment of the data* (explicit assumptions, imputation of missing values, nonduplication of counts, etc.);
- *assumptions made by the analyst in applying the data* (the analyst's knowledge of similar data from other sources).

The following, illustrating some of the problems, occurred in 1979, when the Carter administration proposed a national health plan. Key pieces of data from which this plan was formulated were counts of:

- the currently uninsured and who they are;
- those who would benefit and those who would lose under different types of plans;
- currently available types of insurance coverage;
- the cost to the government, employer, and consumer of different plans.

Three basic surveys provided data on the uninsured: the Health Interview Survey (National Center for Health Statistics, 1976 and 1977) based on a sample of household responses; the Survey of Income and Education (U.S. Bureau of the Census, 1976) where insurance was a supplementary question, and the preliminary data were from the National Medical Care Expenditures Survey (NMCES) (National

Center for Health Services Research, 1977). Adjustments were needed in all survey results to account for coverage other than private health insurance (such as veterans benefits and other public programs), to eliminate duplicate counts, to adjust for nonresponse, and in this case to "age" the data from 1976–1977 to 1980.

Analyses were conducted on the data bases from the preceding surveys by the assistant secretary for planning and evaluation; the Office of Health Research, Statistics, and Technology; and the Congressional Budget Office. The number of uninsured was estimated at 21 to 22 million, 26 million, and 11 to 18 million respectively. The administration used figures ranging from 19 to 21 million in preparing its cost estimate, legislative briefing material, etc.

Why were the numbers different? The Congressional Budget Office adjusted private insurance counts to attribute the same extent of undercount of private insurance as in Medicare (those beneficiaries who fail to report coverage on surveys, and a projection of growth in private coverage from 1976–1981) (U.S. Congressional Budget Office, 1979). There were also differences in accounting for people covered by public programs. In the case of the two departmental numbers, there was a fundamental difference in the basic methodology of the surveys, and some differences in calculating the population covered by programs such as Medicaid, veterans benefits, etc. The Health Interview Survey and the Survey of Income and Education estimates were based on whether or not there had been private insurance, Medicare, veterans or Medicaid benefits *at any time during the year.* The NMCES survey asked the question of coverage at six different times, and their results are based on estimates of coverage for *a full year*—not just any one time.

Differences in the estimates also occurred because of different assumptions about public program coverage of the population. Do you use Medicaid's counts from the states, or household surveys, or surveys where the respondent shows a Medicaid card, or only data validated by actual payment for the services? Whom do you count as covered by veterans benefits—those currently using services, those technically eligible, or all of the three categories of eligibility? Do you count as covered by private insurance those with "dread disease" (e.g., cancer) policies but with no other policies?

Different choices in each of these areas have major implications for proposed beneficiaries, costs of the program, effect on employees, administrative complexity, those remaining uninsured, and design of the plan itself. A difference of a million in the count of the uninsured can mean a difference of $1 to 2 billion in cost, depending on the benefit structure. Such differences can influence political decisions and have a major effect on the lives of individuals, viability of small employers, etc.

How do policy analysts handle these differences in methodology, assumptions, and findings? Their role in this instance is to explain differences in the assumptions and data, and to describe what these differences mean in terms of specific policy options. Analysts are not machines. They have philosophical and disciplinary views. A good analyst tries to make these views known, usually in debates with the policy makers about the options.

The source of the data also must be considered. Do you view a survey conducted by the Health Insurance Association in the same way you view a similar survey conducted by the AFL-CIO, or the American Hospital Association? Not that any of these groups skew their results, but the assumptions made in interpretation and projections will be different depending on perspectives—the values underlying the "what ifs."

What then does the decision maker do, particularly one not highly skilled in social science research? A number of policy makers will turn to more than one source of policy analysis and will sometimes use the technique of adversarial dialogue. Obviously, policy makers will assimilate information and be influenced by their own value system.

Inadequate Data

There are a number of problems presented when data are inadequate or not pertinent for policy purposes. There will never be enough relevant data on a specific issue to satisfy a competent policy analyst. Nevertheless, there will often be a need to act—to make political, social, and economic decisions with or without complete and adequate data. Responsible policy analysts must identify the gaps in data when presenting policy options; specify the limitations and conflicts of data; and describe assumptions used in imputing data and the judgments made in choosing among conflicting data or assumptions. They must be firm in confronting decision makers with the reality that complex estimates cannot be precise. Policy analysts and the decision makers must also work closely with researchers to define what information is needed. Reciprocally, researchers must inform them as to their hypotheses, and the availability, timeliness, and limitations of their data and research findings. In many instances, unless large social experiments are undertaken well in advance of major policy decisions, the decisions ultimately will be based on fragmentary data, unexamined or partially examined value judgments, parochial disciplinary theory about social or economic behavior, or small experiments that may be representative only of local or special experience.

Medicare and Medicaid are classic examples of major social decisions based on limited data and experience. Many of the results have confirmed the theoretical bases for the programs, but there have been many unintended consequences, or consequences that resulted from policy decisions made to gain consensus, or from expedient decisions designed to solve immediate problems, or consequences that were results of actions in totally different social spheres.

It was assumed that providing financial access to care for the poor and the aged would lead to greater physical access, equity of utilization, and improved health status. In the case of *Medicare,* superficially all three occurred. However, physical access for certain services is not equal and perhaps never can be equal. In the case of *Medicaid,* physical access remained a problem, spurring the development of programs like the National Health Service Corps and community health centers to fill gaps. Utilization is uniform across all income classes of the elderly, and health status has improved steadily. The actual use rates for physicians' services have shown that low-income groups have somewhat higher use of physicians' services than higher-income groups, a reversal of the situation in the pre-1966 period (Aday et al., 1980). But there remains a race differential in health status with improvement only partially attributable to improved financial access to health services. During the same period there were major changes in other social programs—food stamps, housing subsidies—and major biomedical and lifestyle changes, which may have affected health status.

An attempt was made at the end of the Carter administration to use the equalization data as a basis for a policy decision that more community health centers and the National Health Service Corps were really no longer necessary at the same level of investment. However, utilization data were one set of data that, if used alone, masked or ignored the following equally relevant data:

- lower-income groups were sicker than the higher-income groups by several health status measures; their utilization rate, therefore, should be higher;
- lower-income groups were more likely to use emergency room and outpatient hospital care than "mainstream physicians' services"; mainstream medicine was a specific intent of Medicare and Medicaid.

The problem was that the real purpose was to seek reductions in the federal budget, and, rather than explicitly stating this, the analysts sought selected data for a predetermined conclusion.

The data available when Medicare and Medicaid were enacted could not be used to predict all of the consequences and changes stimulated by these programs. There were numerous unintended consequences of Medicare and Medicaid:

- cost escalation, in part attributable to increased demand from Medicare and Medicaid beneficiaries, inflation, and new technology;
- the development of a large nursing home industry, and increased "warehousing" of the elderly (a value-loaded statement);
- a substantial increase in certain surgical and medical treatment rates for the elderly and disabled, such as cataract surgery, renal dialysis, prostate surgery—often without adequate evidence of efficacy of the services or increased contribution to better health status, or quality of life.

In addition, other policy decisions were made in other programs that affected the Medicare and Medicaid programs and their beneficiaries in unanticipated ways.

The 1960 census had undercounted the aged population by as much as 10 percent in some areas, seriously affecting cost estimates. There were few data on use of nursing homes or home health services and no empirical base for decision-making, yet these services were included in the benefit package under the assumption that they would reduce the need for higher-cost hospitalization. Retrospective reasonable cost reimbursement of hospitals was used by very few insurance carriers in the mid-1960s. Most used charges or negotiated rates. However, without the decision to enact this form of payment for hospitals, the hospital industry probably would have opposed passage of Medicare.

At about the same period the government made a decision, based on very crude methodology, that there was a shortage of physicians, and stimulated a doubling of enrollment in medical schools. There were a series of unanticipated technological breakthroughs in medicine, many not yet fully assessed, that had an effect on the volume of procedures and the cost of medical care—coronary bypass surgery, lasers, chemotherapy, etc. Even among the "scientific" fields—clinical medicine and biostatistics—there is no agreement on what data, methodologies, and ethical values should be used to assess these technologies.

There were also data that convinced the public that government intervention in health service delivery was necessary to address the great disparities in access to care by age and income class, the substantial disparities in health status by race and income, and the inability of the aged to purchase private insurance because of lack of availability of insurance in some areas and high cost in others

Should there have been a decision not to launch a major program because there were incomplete data? Who would have gained? Who would have lost? Would we now have national health insurance if we had waited? Would technology have been introduced more slowly? Would the costs have risen at a slower rate? Would health status have improved anyway?

There will always be uncertainty, even with adequate data. There will never be enough data or data that precisely answer a specific question. If we were to wait until every uncertainty was eliminated, we would make few public policy decisions. There would be social and political paralysis. Ultimately, decisions are made on political and philosophical grounds. Research and data are not designed to serve the purpose of proving or disproving positions, but they can clarify and sharpen the debates, provide new insights, and describe what is known and what is conjecture.

The Political Process

There are concerns frequently expressed that the political process interferes with the use of data. While this may occur from time to time, the more common problems concern selectivity in use of different data sources, the objectivity and validity of the data, and the differences in perspectives or the disciplinary school of the analyst or the political philosophy of the policy maker. I know of no instance of constraint on releasing the results of surveys, health services research findings, or technology assessments in the health care field. However, this does not mean that policy makers always use the data, or apply the data appropriately. When convictions or political philosophy are strong, the policy maker or policy advocate may seek other sources of data, rephrase the question, raise new issues, or ignore the findings.

Several years ago, a controlled experiment was conducted to determine whether day care and homemaker services are a substitute for nursing home care (National Center for Health Services Research, 1980). The researchers hypothesized that these services would be a lower-cost substitute. The findings, to the surprise of the researchers, were that, rather than being a substitute, these were in fact additive services, and total costs of care were higher. There appeared to be no evidence that morbidity, mortality, or functional indicators were better for the noninstitutionalized than the institutionalized population. In fact, the homemaker and day care group had higher hospitalization rates. How have these findings been used by policy makers and program advocates?

Some, who were truly convinced that it was better to be out of an institution than in one, criticized the sample and the methodology. (Both had been rigorously peer reviewed, as had the study design and findings.) Some policy makers concluded that there was no need for public support of homemaking or day care services.

One view of the findings is that day care and homemaker services may well be valuable, but not as health services or as a substitute for nursing home care in the near term. There may be a long-term difference, but there are no longitudinal data to support or contradict the initial findings. Instead, the issue may be one of quality of life that could not be answered by a study addressed to substitution of services and cost.

A major attack on this study has now been launched by numerous groups and some researchers—the kind of dispute that always rages around social research. However, some of the attacks are clearly related to the policy perspectives or interests of advocates for these services, rather than the study or findings. Some of the criticism is also related to the lifestyle-quality-of-life issue, which was not the issue addressed by the study.

The Analyst and Uncertainties

How, then, does the analyst deal with uncertainty, missing values, different theoretical constructs? There is no cookbook solution, and the analyst's handling of uncertainties will be influenced inevitably by his or her social philosophy or disciplinary bias. Although the analyst is usually not the decision maker, through explication of the options and discussion of the missing data, projections, etc., he or she does guide the decision maker.

For example, in the competition versus regulation debate there is insufficient empirical evidence to support either position in its totality, but there is some evidence to support certain positions at either pole. If, for example, the issue is to encourage increased cost-sharing at the time of purchase of service to increase cost-consciousness (and lower cost), the analyst would take the following steps:

- explore the empirical studies on the effects of cost-sharing;
- explore what the effects might be for subpopulation groups and specific services (e.g., the nonpoor vs. poor, hospital vs. ambulatory), not merely on average;
- seek any available health status data;
- look at long-term effects, if available;
- explore the role of the supply side, not merely the demand side, of the equation, to determine who initiates services;
- explore the institutional problems in changing policy;
- look at the administrative effects;
- determine the views of key political groups—labor, management, physicians, etc. In the case of cost-sharing changes, this would involve collective bargaining contracts between management and labor, and would have a ripple effect on wages and other fringe benefits.

My own conclusion is that seeking utilization and cost control through increased cost-sharing now would not be effective, and would have the potential to harm low-income people. It would be part of my role as the analyst not only to advise the decision makers as to my own conclusion, but also to inform them of evidence and views other than my own.

While the analyst often can be, and is, an advocate, it is important for the analyst to clearly differentiate his or her personal views from the evidence or lack of evidence, since the analyst is also the broker or translator between the researcher and decision makers.

Responsible Research, Analysis, and Decision-making

There are several responsibilities the scientific community should more actively assume in the area of public policy. The first is to increase synthesis and dissemination of findings of research in everyday language. The second is to more clearly and explicitly state hypotheses and assumptions. The third is a need for greater responsiveness to public-policy priorities. And fourth, there is a responsibility to examine critically the use of the data, to challenge the analyst and decision maker when the data are misquoted or misapplied, or when conclusions go beyond those justified by the research. Often researchers and statisticians are inward-looking, concerned primarily with their specific activity and with peer contact and approval. They regard policy makers and decision makers as incapable of understanding the nuances of their trade and fear that their findings will be used beyond their scientific validity. They are also reluctant to respond to the specific policy questions of decision makers.

Policy analysts who would walk the middle ground as the brokers between the scientist and the policy maker must know the sources of data, ensure consideration of the full range of options, challenge assumptions of scientists and policy makers, and make known their own philosophic and value perspectives. They must also not be so paralyzed by their sensitivity to limitations of data that they fail to exploit available information to the fullest extent possible to inform policy decisions.

Policy makers are often mystified by the technicians, unfamiliar with the professional jargon, frustrated that they cannot be given quick, definitive answers to very specific questions. They need to talk with researchers, learn some of the basic questions to ask about the sources and validity of the data, know the assumptions and adjustments made to the raw data. The adversarial process sometimes used by decision makers with the policy analysts can be useful in eliciting value differences or disputes about research and data findings, as well as ensuring consideration of multiple options.

The public must also become aware that most decisions made are based on the interaction of political and social values with data. There will never be enough evidence to address all questions or to make perfect projections. Improved data sources, methodology, and techniques of analysis and projection will provide a basis, if not for better decisions, at least for better elucidation of the issues for informed debate. Political discourse in a democratic society ideally requires knowledge and an understanding of the nature and limitations of information. It also requires understanding of the social, political, and moral values underlying the positions of the policy maker. Policy analysts in their roles as brokers between the researcher and policy maker have a responsibility, through analysis of the issues and presentation of options, to increase the breadth and improve the quality of political discourse. In the final analysis, political consensus will develop out of a combination of information, political, social, and moral values, and the charisma of the leadership.

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