Experimental Methods for Social Policy Research
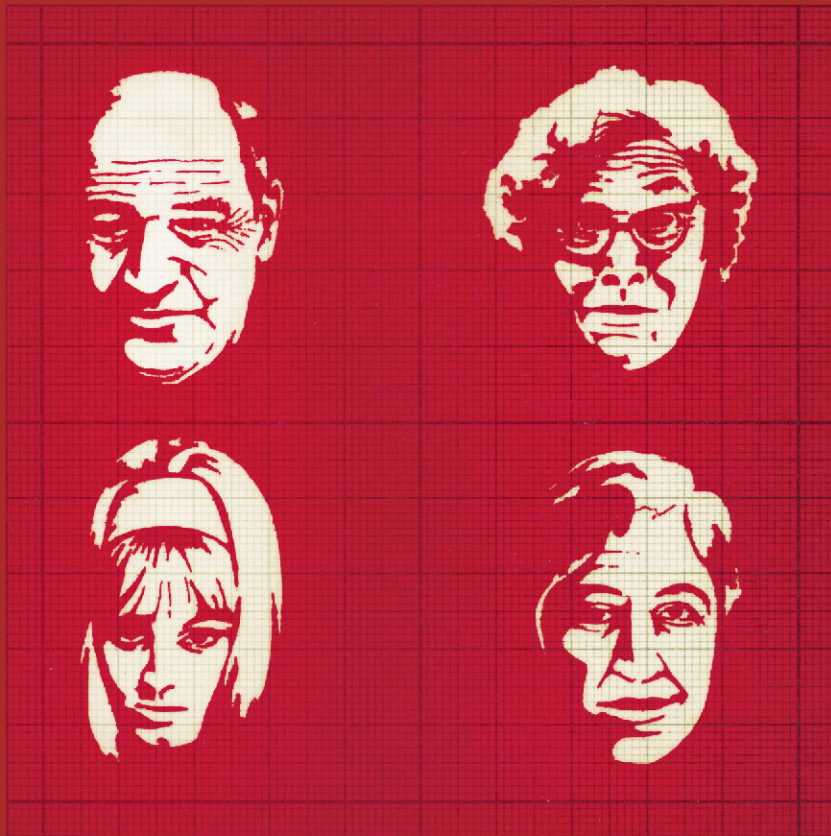
GEORGE W. FAIRWEATHER & LOUIS G. TORNATZKY

Michigan State University

Experimental Methods

For Social Policy Research

PGPS—69

THE PERGAMON TEXTBOOK
INSPECTION COPY SERVICE

PERGAMON GENERAL PSYCHOLOGY SERIES

Editor: Arnold P. Goldstein, *Syracuse University*
Leonard Krasner, *SUNY, Stony Brook*

The terms of our inspection copy service apply to all the above books. A complete catalogue of all books in the Pergamon International Library is available on request.

The Publisher will be pleased to receive suggestions for revised editions and new titles.

Experimental Methods
For Social Policy Research

by
GEORGE W. FAIRWEATHER
and
LOUIS G. TORNATZKY

PERGAMON PRESS

OXFORD   NEW YORK   TORONTO
SYDNEY   PARIS   FRANKFURT

Contents

This page intentionally left blank

Preface

There is an urgent need in contemporary societies for social decisions and actions to be taken that are aimed at improving the quality of human life. Correspondingly, the overpopulation of the planet along with its resulting energy and environmental problems, intermingled as they are with human relations crises, present an extremely complex picture of the human condition which societies need constant information and action to correct.

Yet, it is one of the perplexing paradoxes of our time that scientific methodology is rarely used by democratic societies in appraising alternative courses of social action to meet pressing human needs. Whether this is the result of fear by social decision makers that if truth is known their political power will be diminished or a fear by social scientists that to "get into the act" is to tarnish their scientific purity is not clear. What is clear is that contemporary human problems are so real and the future is so threatened that it is absolutely essential for all persons in the society—scientists, politicians, and citizens alike—to work together to preserve and improve the physical and social climates on this planet.

The authors of this book believe that social scientists can make a major contribution to the solution of contemporary problems by aiding the society in incorporating scientific methods into the social decision-making process. This means a more active and involved role for scientists and a more fully appreciative knowledge of the role science can play in decision making on the part of the government and the public. It is our contention that some scientists must become experts in the humane use of scientific methodology to aid in this problem-solving process. In a broader context, it is an attempt to provide society with a social change mechanism and with the personnel to man it that is badly needed in contemporary life.

The title of this book is meant to express its main purpose. It is to provide actual *experimental methods* for those scientists, public officials, and citizens who are committed to the improvement of living conditions for all members

of society. In this sense the book represents not only a "how it can be done" approach but a social philosophy as well.

From an experimental point of view, the book attempts to deal with the two major methodological facets required for social problem solution. They are the methods to evaluate newly created social models aimed at solving particular problems and the methods needed to disseminate those models that are beneficial to the state, the region, and the nation. Each chapter therefore, addresses the methodological questions raised by these two processes which result in experimental methods for social models and for dissemination.

This book springs mainly from our experiences in social experimental work, covering 7 years for the junior author and about 25 years for the senior author, and from the experiences of several students who have themselves been trained in the use of such methods—mainly in the Ecological Psychology Program at Michigan State University. We are thankful to all these students for their special contributions. We are particularly grateful to Amanda Beck, Esther Fergus, Robert Harris, Susan Hedrick, William Ives, Kent Jamison, Lynn Keith, John Lounsbury, Jeffrey Taylor, Charles Tucker, and Monty Whitney. Throughout this book, the examples from the authors' experience and those of these students is given to illustrate particular experimental points. Constantly helpful in the preparation of this book has been the untiring assistance of JoAnn Ohm.

The general plan of the book is first to present the authors' argument that contemporary social policy decision making is inadequate for the late 20th and 21st centuries. The book then proceeds to define the basic ingredients for an adequate social policy decision-making apparatus and to describe how it can be accomplished. The third chapter in the book is devoted to an exploration of the basic parameters of social models and dissemination processes from a conceptual point of view. The remainder of the book gives general experimental procedures from the inception of the ideas to the implementation of social models found to be beneficial. Special emphasis is given to areas of research that are typically not presented in other research books —how to assemble the needed research team, how to obtain the needed administrative agreements from the involved social agencies, how to sample in community settings, how to administer the social action research program, and how traditional scientific techniques can be modified to make the most accurate inferences possible from such naturalistic research data. The techniques are an intertwining of logical thought, social action, and traditional scientific and experimental methods. The final chapter is reserved for a discussion of a proposed center for research and training. It is our belief that the methods presented in this book and the social philosophy it espouses are

essential ingredients to the improvement of the living situation of persons in our society, and indeed societies everywhere. It is our hope that they will be widely and wisely used by that echelon of scientists who perceive the end product of science as an improvement in the quality of life.

This page intentionally left blank

CHAPTER 1

The Basic Ingredients of an Adequate Social Policy

Any attempt at experimental endeavors in the area of social policy decisions and actions must necessarily be based upon the assumption that such efforts can, in fact, make a vital contribution to the social policy process. Unlike the usual rhetoric of science, social policy experimental endeavors are not value free, nor do they assume that the involved scientists should observe but not act. Since experimental methods in social policy research are intertwined with a philosophy espousing a more active and socially responsible role for social scientists, it is important that the *need* for such a new role be made explicit. We shall elaborate some of the deficiencies inherent in the current political decision-making process and show how these inadequacies can be corrected by a judicious integration of socially conscious scientific thought and action.

As any concerned citizen now knows, contemporary societies are faced with a number of emerging crises that must be solved if people are to survive in a livable environment. Population throughout the world grows out of control and many have predicted that this rapid growth will reduce the quality of life as we now know it (Borgstrom, 1969; National Academy of Sciences, 1969). Industrial excesses continue to pour poisons into the air, streams, rivers, and oceans, further degrading man's environment at an ever-increasing rate (American Association for the Advancement of Science, 1965; Commoner, 1963; Dubos, 1970). Human conflicts exist all over the planet, with social class and caste serving as the framework out of which guerrilla warfare and revolutions grow (Bienen, 1968; Knowles & Prewitt, 1969).

What is so disturbing about this situation is that man has not developed decision-making techniques that solve emergent problems before they become crises. This is a particularly disturbing prospect in modern techno-logical societies because once highly complex problems generate crises, the crises themselves seem impervious to all but major efforts at solu-tion. Equally distressing is the prediction of some scientists that certain

environmental problems, if not solved, may create crises whose destructive forces will then be irreversible (Commoner, 1963). Thus, the most important generic problem faced by all contemporary societies is the inadequacy of their social policy decision making. The reasons for this seem to be twofold: (1) the method of finding solutions appears inadequate when juxtaposed against the problems at hand, and (2) even when solutions are discovered, societal institutions seem to resist their implementation.

Facing these two problems—a poor decision-making process and institutional stagnation—what resources can science bring to bear? By nature and training, scientists have typically adopted inactive social roles that do not place them in the centers of action where decision making and resistance to change actually occur. They have been less than enthusiastic about becoming involved in survival problems at the work-a-day level. But the destructive potential represented by such problems as environmental degradation, population growth, and unjust human relations makes it absolutely mandatory that scientists aid their society in whatever way they can in order to ameliorate these problems. The chapters in this book are devoted to a procedure that will bring the techniques of science out of the laboratory and classroom and into the public policy arena where they can help decision-makers in the choices that will determine the quality of life for the next several generations. In that sense this book is more than a presentation of field research methodology—it represents a new social philosophy for science.

These proposed changes in the scientist's social role should gain acceptance if the relationship between adequate decision making and scientifically sound decision processes is clearly understood. The *need* for a change in the scientist's role from one of reflective thought to one of social program development, evaluation, and implementation can only be seen in its true light when an understanding of the inadequacy of the contemporary social decision-making processes is comprehended. The burden of this chapter is to inform scientists and laymen of this deficit and present the parameters of new, more enlightened decision-making techniques. Subsequent chapters of the book present the details of this decision process as it goes from the creative idea to social products. But first let us explore what the actual barriers are to adequate decision making in contemporary American society.

BARRIERS TO ENLIGHTENED SOCIAL POLICY DECISION MAKING

The Search for Political and Economic Power

While perhaps only differing in degree from other western industrialized societies, it is clear that most social organizations in contemporary America

are locked into a "power" conflict with one another. Whether this is an extension of frontier psychology or a manifestation of capitalist economics is unclear. What is clear is that in one way or another many individuals, groups, and organizations within the American society are consumed by attempts to garner economic and political power so that they or their constituents can gain higher social positions or maintain themselves in the social positions they have already assumed or achieved. This is often, if not always, done at the expense of others. How the search for political and economic power affects survival decision making can readily be seen in some recent historical events and social scientists' writings.

The sociologists Mills (1956) and Rose (1967) have both suggested in their writings that political decisions are made in American society by a trade-off among powerful special interest groups that influence decision making in one way or another. While Mills identifies this as one group—an economic élite—and Rose believes that there are several special interest groups (such as the military, the industrial, and others), *both* agree that societal decision making is strongly affected by these groups, whose principal goal is to accrue more power. Those living in the 1970s have witnessed an unending struggle among organized special interest groups—industry, labor, and recently even minority groups—for control of the human and physical resource pool. While a self-interest competition for power is not new in human affairs, in contemporary America it has nearly become institutionalized.

Of course, this in itself is not bad. What is bad is the increasing striving for power for its own sake, and a displacement of original goals and purpose. Decisions in the society are often based upon political trade-offs and pressure from various groups without regard to whether the solutions that they propose will *actually* solve the problems that confront the nation, such as those of environmental degradation, overpopulation, and unjust human relations. Many of the proposed decisions may not improve the social or physical environment at all and can even add to their destruction. A recent article by the scientist Eipper (1970) illustrates this principle quite well in the arena of environmental planning. In discussing the creation of a nuclear energy plant on a lake in upper New York State, he comments:

> The special interest groups promoting such developments may be industries that wish to use the water or other resources in a way that will yield them maximum profit, or they may be persons whose welfare or sympathies are more indirectly tied to an industry's success. The latter category includes groups of citizenry primarily concerned with immediate industrial benefits to the local economy, and persons in state or federal agencies who are much concerned with promoting the develop-

ment of industrial technology. (Unfortunately, many of these agencies are assigned the dual role of promoting *and* regulating an industry.) Technological interest groups often make irrational assertions (based on questionable assumptions) to support programs that will exploit public natural resources. These assertions—or implications—include the following:

The program—as proposed—*has* to be enacted *now*.
The program will be enacted in any event. You can't stop progress.
The program is needed to fill the demand that will be created by the program.
No one opposes the program. It will benefit the majority, and harm no one.
Data used to estimate effects of the program are the only valid, pertinent data available.
Since there is not proof that the development will damage the environment, we can safely assume it will not.
All effects of the program have been considered.
The program, as presented, represents the sum total of the development contemplated for this particular resource.
All applicable alternatives have been considered.

Not only should such assumptions be questioned when they appear in discussions of pollution issues, but other questions should be asked, such as the following:

Who participated in formulating the assumptions and conclusions about this program's desirability?
What lasting social benefits—and costs—will this program produce? Who will derive these benefits?
What environmental problems will, or may, be created?
What alternatives exist? Has the relative desirability of not enacting the program been evaluated?

The problem that we have been attempting to describe is the seemingly unending struggle for social and economic power by contemporary groups and institutions, often without apparent regard for long-term effects upon the social and physical environments. While Galbraith (1971), in the heyday of optimistic liberalism, heralded the era of countervailing power, the manifestation of that policy has been a mindless search for control of the system.

The Myth of Legislating and Funding Away Problems

Too often the American way to deal with crises has been to pass laws against them, develop a bureaucracy to deal with them, or create a pool of money to buy a solution for them. The obstacle to effective social policy decision making emanating from this approach is the magical belief in the "knowhow" inherent in money and governmental action. Some examples from the recent past are instructive. During the Johnson era, a number of community action programs were designed and implemented that attempted to improve the social positions of persons who participated in them, particularly minority group members. The central and often single idea behind these programs was to involve poor people in planning for improving their own fate. Based on some not too clearly articulated theoretical notions about group participation, the programs were implemented on a broad scale with heavy funding. The less than desirable outcome of this approach to social problem solving has been documented elsewhere (Marris & Rein, 1967).

A specific example from this approach is the Job Corps. It was designed to place large numbers of minority persons into the mainstream of employment after participation in a program for upgrading their skills. Unfortunately, the program was rapidly conceived and heavily publicized; it never actually dealt with one of the principal problems of minority group employment—that of racial discrimination. No adequate evaluation of that program was ever carried out in a well-designed comparative experiment. Even today the results of the program are unclear.

There are a number of other examples of lack of problem solutions that could be sighted. From them, it appears clear that governmental action as represented in legislation and funding does not in and of itself solve societal problems. Laws can create programs and fund them, but they cannot determine to what degree programmatic efforts are successful in ameliorating the problem. This can be done only through systematically planned scientific evaluation. Simply giving a snappy title to a program is not the same as alleviating a social problem. It is equally true that money expended on programs is not a clear predictor of satisfactory output (Coleman *et al.*, 1966; Fairweather, Sanders, & Tornatzky, 1974). The entire literature on social innovation shows that any new social process—regardless of how it originates —may or may not be successful depending upon many factors (Barnett, 1953; LaPiere, 1965). The inadequacy of problem solutions through the creation of legislated new social programs is further reflected in the scientific literature. The outcome of any social innovation will remain unknown without adequate planning and clear evaluation. However, since many legislators, bureaucrats, and voters believe in the magic of money and programs,

this belief itself operates as a barrier to creating a more adequate decision-making process.

The Propensity for Organizations to Perpetuate Themselves

A somewhat cynical associate of ours made the following observation about contemporary American institutions: "The educational establishment's goal is to get everybody educated through the Ph.D.; the correctional system's goal is to get everybody in jail; the automobile business' goal is to have every man, woman, and child in the United States own a new car every year." Though somewhat absurd, there is a bit of insight here that points to a current phenomenon of some importance. Institutions within the American society tend to perpetuate themselves at all costs. It is probably their primary function (LaPiere, 1965). An implicit rule of organizational functioning is to strive for the survival of the organization. Unfortunately, this may have serious implications for hindering an effective social policy decision-making process. An adequate social policy decision-making apparatus must not only have the capability to create innovation but also to eliminate outmoded programs and institutions. For example, higher educational institutions tend to perpetuate outmoded norms of intellectual reflection resulting in "ivory tower" solutions to problems and in the belief that solutions found in laboratories and published in learned journals will somehow lead to a better world. Similarly, the current organization of medical services with its adherence to a fee for service system is singularly outmoded when juxtaposed against unmet needs of the poor in contemporary America.

The point to be made here is not that this perpetuation of the *status quo* and organizational insularity are necessarily evil. They may or may not be. More often than not, however, it is an inherent characteristic of modern complex organizations to be structured in such a way as to make change difficult. The intent of the modern bureaucratic system is to rationalize and make predictable the task environment in which it is involved. As such, it is particularly unresponsive to pressure for change, with the uncertainty that change always brings. Few contemporary bureaucratic systems have built-in subcomponents to deal with the problem of change or to prepare the organization for change. While some authors have heralded the creation of a new type of organization (Bennis, 1966) in which reliance is placed in "temporary systems," this more responsive type of organizational form has not been adopted to any significant degree. Even if it were, there is this further question: To what extent is organizational rigidity also a function of personal needs and characteristics? It has often been observed that individuals tend to avoid and resist situations of uncertainty. One way of doing

this in an organizational context is to manifest particular resistance to inno-vation and change.

The fact that most contemporary bureaucratic organizations are not geared for change has significant implications for a national investment in innovation. Contrary to some opinion, there *are* considerable monies, both public and private, available for fostering innovation through research and development. However, most of these monies are often funneled into exist-ing organizations, with traditional ways of functioning, with no acknowledg-ment of a need for new and innovative approaches to problem solving. More often than not money allocated for pilot programs in innovation goes to organizations whose basic premises for functioning are themselves un-challenged by the money givers. The manner in which the perpetuation of the *status quo* is brought about may be reflected in the current use of family planning as an answer to population problems. This process has been described by one of the authors in the following manner (Fairweather, 1972):

A great deal of money is being invested in establishing family planning centers. The family planning unit has been *uncritically* accepted by governmental planners as a means through which population can be regulated. Unfortunately, family planning has not yet demonstrated by comparative experiments that its application will result in reducing birth rates. Nonetheless, if the created family planning centers follow the usual bureaucratic procedures for acceptance as a societal institu-tion the following events are likely to occur. First, the units will be established as a national policy with a large investment of federal money. Second, there will eventually be some inquiry by the Congress about whether or not these units are, in fact, reducing the birth rates. At that point, research money will become available (notice, it will not be available until after the governmentally sponsored units are almost unchangeable institutions). Voluminous data will show interested mem-bers of Congress that, indeed, these units are being dramatically effective in reducing fertility rates. However, a close scientific scrutiny of that data would probably reveal that *no* definitive scientific information validating family planning in direct experimental contrast with other forms of population regulation will be presented. Since the researchers evaluating the family planning program will usually be hired by the agency itself, their continued employment may depend on a positive evaluation of it. It is highly unlikely under these circumstances that any negative information will get to the congressmen. Current research is often aimed at supporting existing governmental programs whatever

they might be. Comparative experiments that question the program or the social policy from which it emanates are typically not funded.

Thus a cycle of action is established that results in the creation of information which corroborates the initial social decision. The generic process goes something like this: An agency establishes a program designed to implement a particular social policy. Once having established the program there is some question by the Congress or the administration about whether or not it has accomplished the purpose for which it was established. The program is then *evaluated* by researchers who usually collect *selected* kinds of information. This information often supports the notion that the program is accomplishing its goal. Because of these reassurances, more money is appropriated to the program and more evaluations positive to the program are forthcoming. Thus, a vicious circle is created in which a particular governmental policy is supported by "*scientific*" evidence which results in the creation of a bigger and bigger bureaucratic organization with more and more funds at its disposal. *The basic question about whether the governmental program is better or worse than other programs the government might have adopted to solve the problem is never raised.* In the example just given, no one has raised the issue as to whether or not the family planning model itself is valid.

The important point to grasp is that powerful organizations have emerged in American society and that they maintain traditional practices even when they are not aimed at solving pressing social problems. By perpetuating such traditions, they prevent change. This is, therefore, another element linked to the decision-making process which prevents adequate solution of contemporary human problems.

The Belief in Compromised Verbal Solutions

This obstacle to effective policy decision making is related to the difference between the language of science and the language of politics. An implicit assumption of political practice inherent in the democratic process is that problems can be *solved* through extensive debate and compromise. Most legislative and administrative policy decisions are compromises among differing solutions to a problem. This is the essence of democratic decision-making practice in day-to-day politics. The high verbal skill and legal background found in most state and federal legislatures is no accident. Their skills are totally congruent with this verbal decision-making process.

The "solutions" reached in various problem areas during the past several

years have been of this type. Most of the civil rights acts have been a combination of solutions as a result of the compromise process in which they were generated. Analogous to the whole computer science anecdote "garbage in, garbage out", the results of programs implemented under these laws has been ineffective to say the least. This continued reliance on compromise solutions developed and validated *only* by verbal debate will be particularly acute in the environmental area in the forthcoming years. Thus, many decisions being reached now in this area on the basis of very limited scientific data will have far-reaching effects for generations to come. Compare this compromise verbal-debate solution against both the language and the basic methodology of science. Here problem solutions are posed in clear operational terms in such a way that other scientists in other locales could replicate the proposed solutions if necessary. Ultimate solutions are not reached by combining alternatives whose individual or combined results are unknown but by comparing alternatives one against the other. In this sense the solutions that are found have empirical validity. All this simply shows that decisions based solely upon debate and group agreements are not necessarily valid decisions to the solution of a problem *until* they have been tried and evaluated empirically.

THE UNDERLYING PARAMETERS OF AN ENLIGHTENED SOCIAL DECISION-MAKING PROCESS

It appears that the current decision-making processes—strongly influenced as they are by special interest groups, common sense solutions to complex social problems, institutional stagnation, and dependence upon verbally debated compromises—are probably not adequate to the task of providing a meaningful quality of life on this planet in the late 20th and 21st centuries. It therefore seems necessary that societies' members, and particularly scientists, help develop decision-making processes which will both preserve the democratic principles of the American society and at the same time yield empirically valid solutions to society's problems. In order to accomplish this, two primary conditions must exist: (1) scientific methods must be integrated into the decision-making process and (2) a new generation of scientists who perceive the solution to these problems as one of their primary responsibilities must be trained. The necessary conditions for such training are discussed in Chapter 14.

Social support will be necessary if science is to be adequately integrated into the decision-making processes of the nation. As a necessary first step, society's decision-makers and the public will have to lose their fear of science, which has often resulted from a misunderstanding of what science

really is. A justifiable fear has developed among the population because of *some* of the behaviors that *some* scientists have shown in the past. For example, recently there has been the revelation that some black persons were denied treatment for syphilis even after penicillin was discovered simply because they were considered a control group in a research program; and, of course, the hideous and inhumane experiments conducted in Germany on humans during World War II will always serve as a reminder of science allied with horror. Unfortunately, much of the public believes that this inhumaneness is the predictable result of science grown too powerful. Actually it is the result of its unjust use. About this matter one of the authors has recently written the following (Fairweather, 1972):

> Unfortunately, other roadblocks appear in a scientific approach to human problem solution. Among them is the commonly held idea that experimentation is bad. It seems immediately to conjure up ideas of another Nazi Buchenwald or Auschwitz. Experimentation with human beings has thus been judged as being bad. Persons whose children participate in new school programs, for example, are often reported to say that "my child is not going to be a guinea pig for any experimenter." And very often, persons who have been subjected to medical procedures regard themselves as paying the price for someone else's curiosity without any voice in the matter. The fact is, however, that human beings have always been the subjects of experimentation because they have been alive when certain events have taken place that have changed their environment. What their position would have been had the events not happened will never be known. For example, the development of atomic fission happened and no person, other than a few scientists and politicians, had a voice in its discovery and its use. Thus no one asked the public whether or not they wanted the atomic and hydrogen bombs. The bombs were manufactured and the people of the world were therefore participating in one of the most potentially dangerous experiments of all times. Who decided that the public would be the guinea pigs for the automobile with its internal combustion engine? In fact, the public is only recently becoming aware that automobile manufacturers are daily experimenting with "their atmosphere" by continuing to produce the internal combustion engine.
>
> And is the same not true of new laws? Aren't they all social experiments? Are legislators better predictors than anyone else? Do they know what the final and total outcome of a law will be before it is placed in action? Who would have guessed that the Eighteenth Amendment, rather than controlling alcoholic indulgence, would actually create a

generation of lawbreakers who flaunted their contempt for that social experiment by drinking at the speakeasy. Thus man is forever being subjected to experimentation. His life, however momentarily secure, is a risk-taking adventure in which there is never absolute—only relative—certainty. The industrialists who manufacture detergent soaps, cars, and drugs and the legislators who are continuously passing new laws are establishing experiments under which the people live as experimental subjects. Would it not be more humane if a group of humanistically oriented scientists tried, in collaboration with the elected officials and the public, to find better ways in which man could live—particularly if the scientists had been educated to place the highest value on improving the quality of man's life? After all, the industrialists are motivated by the search for short-term profits and the politicians by political power. Surely with our current survival problems someone should be attempting to improve the general quality of man's life. Since experimentation occurs as a process of living, it cannot be escaped. The real question now, as it has always been, is: toward what ends will experimentation be carried out? And who will decide to what uses knowledge will be put? What legacy will be left to our children as a result of such experimentation?

Thus, if science is to be used in the decision process for the solution to human problems, scientific activity must emanate from a humanitarian perspective. And there are certain other key characteristics which must be embodied in what science must become. It involves a change from what historically has been the role characteristics ascribed to scientists by those whose role model was mainly that of the natural or physical scientist. Some of the key characteristics of the new role beyond its value orientation are its active nature, its social use of experiments, its problem focus, research constancy, and its social utility. Let us now examine each of these in turn.

A Humanitarian Value Orientation

In 1961, the sociologist Gouldner wrote an article entitled "Anti-minotaur: The myth of a value-free sociology." Gouldner pointed out that sociology was value-free by political necessity and not by any inherent characteristic of the scientific discipline. He made this point by tracing the history of a social science—sociology—and showing that the origin of the "noninvolved and value-free" orientation to sociology was basically a maneuver in response to political pressure rather than a logical premise of what the science of sociology ought to be. Essentially, at the time Max Weber proposed his