Action Science

Concepts, Methods, and Skills for Research and Intervention

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University of Chicago

To our students,
from whom we learn so much

Preface

Creating usable knowledge is becoming an increasingly important topic in the social sciences. Lindbloom and Cohen (1979), for example, have written about producing knowledge that can be used to formulate policies. Our focus is on knowledge that can be used to produce action, while at the same time contributing to a theory of action. The concept of usable knowledge has produced an uneasy mixture of enthusiasm and skepticism. It has generated enthusiasm because we need more usable knowledge to help manage interpersonal, community, and organizational affairs. Moreover, technological spinoffs from the physical sciences suggest that the social sciences might generate similar benefits for social practice. But there is widespread skepticism as well. Policies for dealing with poverty, discrimination, and unemployment bog down in the complexities of implementation, and in retrospect, some observers argue that these policies have made the problems worse. Programs for transforming organizations succeed each other with the seasons, leaving in their wake the weary wisdom that nothing really changes. Responsible social scientists may respond to these disappointments

by turning inward to research that seems increasingly esoteric to practitioners.

In proposing an action science, we hope to articulate the features of a science that can generate knowledge that is useful, valid, descriptive of the world, and informative of how we might change it. This emphasis on advancing basic knowledge while also solving practical problems has had a long and distinguished career in science. In the natural sciences it is illustrated by the work of Louis Pasteur, who discovered much about the role of germs in illness while trying to solve problems of fermentation for French vintners. It is also illustrated by early work in operations research: scholars put aside their interest in basic research to help England solve critical practical problems during World War II. In the course of this work, they discovered exciting intellectual problems whose solution contributed to basic knowledge.

In the social sciences this emphasis on combining science and practice is usually entitled action research. We would be content to use the term *action research* if it were not for two factors. First, over the years action research has often been separated from theory building and testing. Leading social scientists distinguish action research from basic research by asserting that the intention of action research is to solve an important problem for a client and not necessarily to test features of a theory (Coleman, 1972). We believe there is value in combining the study of practical problems with research that contributes to theory building and testing.

Second, many action researchers understandably conduct their empirical work by following the current ideas about standard scientific research. The dilemma is that some of the currently accepted ideas of rigorous research may be self-limiting. To attain a certain level of rigor, the methodology may become so disconnected from the reality it is designed to understand that it is no longer useful. For example, the research that followed and built on the early studies of Lewin, Lippitt, and White (1939) on leadership styles and group climates was indeed more rigorous, yet far less usable by human beings in real-life conditions (Argyris, 1980) than the original studies.

Two of the best known exemplars of action science researchers as we understand them were Kurt Lewin and John Dewey. Both designed and executed action or demonstration experiments whose consequences they studied systematically. Both were interested in adding to fundamental knowledge while solving practical problems such as educating youngsters, influencing eating habits during World War II, or reeducating individuals about their prejudices.

Dewey and Lewin were committed to notions of better societies or to what has recently been described as liberating alternatives. In their worlds, citizens would be held responsible for becoming inquiry oriented in order to produce a society that was learning oriented and experimentally minded. This organic mix of descriptive and normative interests also characterized the great early social scientists such as Weber (Asplund, 1972).

Our view of action science builds on the ideas of these early practitioners. We maintain that social science should have an important role in generating liberating alternatives. This objective cannot be accomplished without challenging the status quo.

In social life, the status quo exists because the norms and rules learned through socialization have been internalized and are continually reinforced. Human beings learn which skills work within the status quo and which do not work. The more the skills work, the more they influence individuals' sense of competence. Individuals draw on such skills and justify their use by identifying the values embedded in them and adhering to these values. The interdependence among norms, rules, skills, and values creates a pattern called the status quo that becomes so omnipresent as to be taken for granted and to go unchallenged. Precisely because these patterns are taken for granted, precisely because these skills are automatic, precisely because values are internalized, the status quo and individuals' personal responsibility for maintaining it cannot be studied without confronting it.

In order to conduct research that includes the option of changing the status quo, one must have models of the status

quo and of a different universe that can be used to create a dialectic. Thus, we are interested in research that generates and tests propositions concerning (1) the variables embedded in the status quo that keep it the status quo; (2) the variables involved in changing the status quo and moving toward liberating alternatives; (3) the variables in a science of intervention that will be required if the previous propositions are ever to be tested; and finally (4) the research methodology that will make change possible and simultaneously produce knowledge that meets rigorous tests of disconfirmability.

In our discussions with social science colleagues on how to produce valid and usable knowledge, we encounter several objections to research that attempts to alter the status quo. These objections raise valid concerns, but these concerns are often dealt with in ways that are counterproductive to science and to practice.

The first objection begins with a premise of normal science: the primary objective of science is to describe reality as accurately as possible. Hence, mainstream scientists focus on describing the world as it exists and not on changing it. The paradox is that this approach cannot describe many important features of the world as it exists. Among these features are the defensive routines that protect the status quo against change. We will probably never get a valid description of the resiliency of defensive routines by just watching and waiting. Some defenses do not even surface until the first layer of defenses has been engaged (Argyris, 1985).

A corollary to the premise that the purpose of science is to describe reality is that generating knowledge about change is a second step, one that must wait until basic descriptive knowledge has been accumulated. In action science we agree that it is important to understand the world if we are to change it. But we also believe, as Kurt Lewin said, that the opposite is true: one of the best ways to understand the world is to try to change it. In choosing not to explore ways of changing the status quo, researchers choose to perpetuate a world in which there is little knowledge about the defensive routines that maintain the status quo.

A second objection is that defensive routines may be functional and hence should not be challenged. Defenses do serve to protect individuals and organizations in important respects. But what if such defenses are functional and dysfunctional at the same time? Our data suggest that some defenses can significantly limit an individual's and an organization's capacity to learn and adapt and hence to survive and flourish. To point to the positive aspects of defensive routines as reasons for not studying how to change their negative aspects may itself be a defensive routine.

A third and related objection is that attempts to change might get out of hand and unintentionally harm participants. This is an important concern, one that researchers must constantly respond to. But what leads researchers to believe that clients will allow them to create dangerous conditions? Our experience is that social scientists are successfully denied access by subjects who do not trust the researchers or do not agree with the research. We should add that our experience is based on a model of a collaborative relationship between researcher and subjects or clients, one in which clients can make an informed choice about proceeding with the research. To the degree that the researcher has unilateral control, subjects may be less able to protect themselves.

The notion that clients have ways of protecting themselves leads to a fourth objection: the researcher could be kicked out. Confronting organizational defensive routines in a group could be dangerous. The group could unite and turn against the researcher who is trying to discuss issues that the group prefers to leave undiscussed. We agree that this is a danger, but we believe that the response need not be to withdraw from such studies. Some scientists should consider conducting research to illuminate under what conditions these dangers can be overcome.

One of the major contributions that action science makes to researchers is to help them develop the knowledge and skills needed to reduce the likelihood that they might unintentionally harm people or that participants might turn against them and to increase the clients' or subjects' commitment to research. The

knowledge required is related to additional modes of inquiry, new methods of research, and the interpersonal skills to conduct this research successfully. This represents a primary thrust of our book.

Several features of normal science, including intersubjectively verifiable data, explicit inferences, disconfirmable propositions, and public testing, are also crucial to our approach. These features are designed to create challenging tests that may disconfirm our ideas. The criteria for validity must be rigorous because we are studying difficult, threatening issues that affect people's lives.

We have written this book with three purposes in mind; these correspond to the three parts of the book. The first purpose is to identify some of the primary issues in the philosophy of science that relate to action science and have been discussed through the years. In Part One we describe the major positions taken by some of the key protagonists in this dialogue. We introduce our position and conclude with a statement of our theoretical perspective. In doing so, we neither suggest that we have found the answer to these age-old questions nor do we imply that the answers we provide are complete. The reader familiar with the literature on the philosophy of science knows that these issues have a long and distinguished history. We show where we believe action science fits in this dialogue in order to set the stage for further inquiry and clarification.

The second purpose is to identify similarities and differences in the methodology of normal science and action science and to examine the implications of these for the skills that researchers may need to be action scientists. In Part Two we explore three research approaches used in contemporary social science and compare them to action science. We identify the norms and rules that guide inquiry in each of these approaches, and we discuss how each may be self-limiting. We then describe the methods of action science designed to overcome these limitations and the skills that researchers need to use such methods. These skills build on those that researchers have already learned in the methodology courses presently taught in most universities.

The third and probably most important purpose of this book is to show that a community of inquiry can be created in which the skills needed to conduct action science can be taught. Action science cannot become a science unless its skills can be made explicit and taught, so that successful action science research is more science than art. In Part Three we illustrate how we are teaching the skills of action science. Our approach is not necessarily the best, and we intend to continue our inquiry into modes of teaching action science skills. Our hope is to provide some guidelines for those researchers who may wish to learn and to teach these skills and, more importantly, who may wish to conduct empirical research on how they might teach the skills to young researchers.

Action Science is a product of genuine cooperation among the three authors. We designed and executed the book as equal partners.

We acknowledge the help of Dianne Argyris, Donald Schön, and Emily Souvaine in reading parts of the manuscript. We are greatly indebted to Marina Mihalakis, who not only typed and retyped chapters, but did so with speed, competence, and with a careful eye to what statements made or did not make sense. Marina is a great team member.

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Chris Argyris is James Bryant Conant Professor of Education and Organizational Behavior at Harvard University. He was awarded the A.B. degree in psychology from Clark University (1947); the M.A. degree in economics and psychology from Kansas University (1949); and the Ph.D. degree in organizational behavior from Cornell University (1951). From 1951 to 1971, he was a faculty member at Yale University, serving as Beach Professor of Administrative Sciences and as chairperson of the Administrative Sciences department during the latter part of this period.

Argyris's early research focused on the unintended consequences for individuals of formal organizational structures, executive leadership, control systems, and management information systems—and on how individuals adapted to change those consequences (*Personality and Organization,* 1957; *Integrating the Individual and the Organization,* 1964). He then turned his attention to ways of changing organizations, especially the behavior of executives at the upper levels of organization (*Interpersonal Competence and Organizational Effectiveness,* 1962; *Organization and Innovation,* 1965).

This line of inquiry led him to focus on the role of the social scientist as a researcher and interventionist (*Intervention Theory and Method,* 1970; *Inner Contradictions of Rigorous Research,* 1980). During the past decade he has also been developing, with Donald Schön, a theory of individual and organizational learning in which human reasoning—not just behavior—becomes the basis for diagnosis and action (*Theory in Practice,* 1974; *Increasing Leadership Effectiveness,* 1976; *Organizational Learning,* 1978).

Argyris is currently working on a project that will relate the perspective presented in this book to the ideas of other researchers and practitioners. Argyris has earned honorary doctorates from the Stockholm School of Economics (1979), the University of Leuven, Belgium (1978), and McGill University (1977).

Robert Putnam is a doctoral student and an instructor in counseling and consulting psychology at Harvard University. He received the A.B. degree with honors in political science from Syracuse University (1970) and was designated a Woodrow Wilson Fellow. He studied political economy and government at Harvard University, served in the Peace Corps in Costa Rica, and worked as a counselor and training director at a human service agency in Boston. He received the Ed.M. degree in counseling and consulting psychology from Harvard University (1980).

Diana McLain Smith is a doctoral student and teaching fellow in counseling and consulting psychology at Harvard University. She received a B.A. degree with honors in political writing from Boston University (1973) and a masters degree in counseling and consulting psychology from Harvard University (1980). She has worked in the area of community mental health as an administrator and a psychotherapist and more recently as a consultant to organizations in both the private and public sectors.