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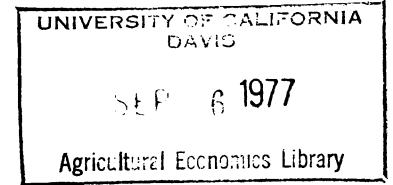
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Social
Sciences

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THE CREATION OF "TRUTH" BY SOCIAL SCIENTISTS AND PLANNERS:
ASSUMPTIONS, DECISIONS, AND THE NEGOTIATION OF REALITY*

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* I have benefited from discussions with Paul W. Barkley, John W. Bennett, Sandra M. Gifford, R. J. Hildreth, L. M. Hartman, O. Norman Simpkins, and Donald M. Sorensen concerning some of the topics discussed in this paper.

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Hermann Hesse (p. 42) once wrote a short story in which God sent a flood putting an end to a bloody World War. The last European was struggling in the flood waters when an ark appeared under the command of an aged patriarch named Noah and the unfortunate man was hauled onboard. The crew of the ark was composed of persons from every ethnic group on earth. During the voyage each was called upon to demonstrate his or her skill. Finally, the time for the European to perform came and he informed his ark-mates that he was skilled in the use of his intellect in solving the "... great problems on which the happiness of mankind depends."

Noah was impressed, "The skill that brings happiness is certainly more important than any other. Just tell us what you know about the happiness of mankind. We shall all be grateful."

Up until then the European has been haughty and self-assured. Now he seemed at a loss.

"It's not my fault," he said hesitantly, "but you still don't understand. I didn't say I knew the secret of happiness. I only said that my intellect is working on certain problems the solution of which would promote the happiness of mankind. Such work takes a long time, neither you nor I will live to see the end of it. The problems are knotty and many generations will continue to ponder them."

"The audience listened with mounting perplexity and distrust. What was the man saying? Even Noah averted his eyes and frowned."

"The Hindu smiled at the Chinese. When the others could think of nothing to say, the Chinese spoke up. 'Dear brothers,' he said most affably, 'this white cousin is a joker. He is trying to tell us that his mind is working on something which our great-grandchildren's great-grandchildren may or may not live to see. I suggest that we applaud him as a joker. He

says things that none of us can quite understand, but we all suspect that if we did fully understand them they would make us laugh and laugh and laugh.'"

Social scientists are in ways like the European. We are interested in human happiness, we speak of the quality of life, personal satisfaction, sense of security, and freedom from need. We use our intellects to assist others in reaching these objectives. We expect to spend much of our lives in the quest of ways to increase happiness while knowing that we may be unsuccessful. As a consequence we run the risk of being called the joker. Our explanations, methods, and research techniques often do not provide adequate answers to many problems of pressing human concern. As Greer (p. 129) has noted, "We have at best crude approximations of measurements for such variables as anomie...sentiment, attitude, and the like. Yet we have theories that hypothesize invariant associations of these among themselves and with other aspects of behavior. We imagine the 'felicific calculus' with units of happiness, but in practice we use crude questions for a crude concept."

We run the risk of being called the joker when we ignore many of the limitations that exist in scientific inquiry and in the sharing of research results with policy-makers, planners, and administrators who make decisions effecting our lives and the lives of others. I would like to discuss some of the limitations inherent in the scientific approach to the study of human behavior and suggest ways in which we can compensate for these shortcomings.

Science and in specific the social sciences constitutes one of the many subcultures in Western Culture. For our purposes culture may be defined as human knowledge. This is similar to the idea proposed by Boulding (1956) in which he conceptualized culture as images of ourselves and our

surroundings. Science is a body of knowledge and one of the many methods which can be used to gain an understanding of our world. It is a powerful tool when applied with skill and insight but science, like any other approach to understanding, has its limitations. I would like to explore some of the ideas that have been developed concerning the nature of knowledge and relate them to social science inquiry and the uses of social science in the solution of human problems.

Knowledge is reality. What we know, our percepts and concepts, our beliefs, our values, our skills, our awareness of ourselves and others, and our awareness of our environment constitute our reality. What we know is what we are. I know what I am by knowing my relationships with all other persons and things, past and present. I know there are many things I do not know and this too is a part of my reality. Even the things I do not know are interpreted on the basis of the things that I do know. I know there are other realities. I know that I will learn about the realities of other people but I can only interpret them on the basis of my reality, on the basis of my knowledge, because that is all that I have. I cannot share your experience but we can experience things at the same time and place. You can experience me and I can experience you. I can tell you about my experiences but my telling you of my experiences does not allow you to experience them. You can only interpret my experiences on the basis of your own experiences. As both Hume and Russell have shown, knowledge is ultimately derived from individual human experience.

Knowledge is "truth." While we may only be sure of our own death, there are other things which we accept as true. We ignore the philosophical complexities, receive information from our interactions with the environment, and place our faith in this information. Of course we know things

which are false from our point of view but the knowing that they are false is for us a "truth." We may erroneously accept a falsehood as being true but, until we discover that it is false, it remains true for us. In this sense some philosophers claim there is no false information, there is just information.

Knowledge is an adaptative "tool" and is more highly developed by homo sapien sapiens than by any other species. It is used to guide our behavior and to interpret the behavior of others. Our ways of knowing permit social intercourse and communication. We use information to focus our attention on some aspects of the environment while ignoring other aspects. We fear the unpredictable, we fear chaos, and we continually create new knowledge to interpret and assign meaning to the present and to anticipate the future (Garfinkle; Goodenough; Mehan and Wood). Novak in his discussion of knowledge as culture noted, "Experience rushes in upon us in such floods that we must break it down, select from it, abstract, shape and relate. . . A culture is constituted by the meaning it imposes on human experience...even the most solid and powerful social institutions, though they may imprison us, impoverish us, or kill us, are fundamentally mythical structures designed to hold chaos and formlessness at bay...culture begins and ends in the void."

Knowledge is also adaptive in the sense that new knowledge is created in the attempt to solve problems. We apply our energies to problems and develop new ways of viewing certain aspects of the environment. As a result increased specialization is possible. As Simpkins has noted, there is an increase of information with the development of occupational specialization. In the past when farmers served as their own blacksmiths, veterinarians, bankers, etc., there was a limit to the amount of knowledge which

could be developed and brought to bear on any single problem. As people left farming and specialized in these areas, new knowledge was created and important breakthroughs occurred. A part of the creation of new knowledge includes the development of ways in which to search for knowledge. Scientific methodology has been one result of the search for new information.

Knowledge tends to be created at a conservative rate. Wallace points out that two major problems must be solved by all people. We must replicate uniformity and organize diversity. We replicate uniformity in order to make our behavior intelligible to others and to interpret their behavior, to use the skills and knowledge which have proven successful in the past to meet the needs of the present, and to reduce the need to continually learn de novo from new experiences or, said another way, to reduce the high cost of new information. We organize diversity so that we can interpret new situations, know how to handle new conditions, and learn from our mistakes. Consequently, we try to limit the rate of change in knowledge to a level that we can control. It is often to our advantage to maintain the status quo if we are in a satisfactory position. In some cases when we are not in a satisfactory position, we do not attempt to change because the circumstances in which we exist are at least predictable if not comfortable. We are often amazed in development programs when farmers refuse to adopt a new crop which we believe would be advantageous. If they have had no experience with the new crop and cannot anticipate their return, they may well reject our offer. The cost of the new information is too high in that they must risk their livelihood to determine the yield of the new alternative.

Knowledge systems tend to be conservative in another way. Levi-Strauss has pointed out in his study of mythology that knowledge systems tend to be circular and closed. It is possible to start at any point in a set of myths

which describe and explain some phenomena and eventually work back to the starting point. Any set of knowledge including science or any discipline can be viewed as a type of mythology in that it is a set of interrelated abstractions used to account for certain kinds of phenomena. Generally, each of us accepts our view of the world as adequate at the moment for describing and explaining our world. Those things which we cannot describe and explain are often labeled as unimportant and not worthy of the efforts required to learn about them. If circumstances were otherwise, we would make the effort. While it is true that we continually search for new information in attempts to solve problems and learn from experience and that there is always a degree of novelty in behavior, our learning is always based upon knowledge previously accumulated. Furthermore, we often ignore information which cannot be related to what we presently know because we have not learned to identify it and consequently it falls outside of our range of awareness. We do not break the circle of understanding but rather continually expand it maintaining the integrity of its boundaries. We are victims of our past and cannot disassociate ourselves from our experience. In science we close the circle by calling what we are unable to account for the unknown and control the mysteries of the universe in this manner. In a sense the concept of the unknown is a category related to the environment even though it is a residual one. We often say that the purpose of science is to make the unknown known and take comfort in this view, however, the unknown we speak of is delimited by present knowledge and the realm of discourse selected. In statistics, we close the explanatory circle by calling unexplained variance a measurement error but it is difficult to explain why it is an error or how to correct such an error. As noted earlier, we seem to have a special abhorrence of mystery and the unknown, we do not like not

to know and as a consequence are very inventive in our attempts to close our conceptual circles. By keeping these circles closed, however, we reject potentially useful information.

Knowledge and thereby reality and "truth" are human creations. Knowledge is derived from experience and is created as we attempt to solve problems. Even though we have learned concepts which were developed in the distant past, they are only meaningful when applied to the present in which they are learned and related to information gained from experience. Furthermore, as Wagner has suggested, when existing categories are applied, things in the present are made equivilant to things in the past and consequently this act of categorization is creative. After all we have never been in this present before nor will we return. When new categories are created to interpret the environment, things which have never existed are invented. When we conceive of things which have never existed and make them occur, we have created reality. In science, we create the reality we report upon. The reality we "discover" is in part determined by the conceptual approach selected and the operational definitions or measurement techniques created to represent theoretical concepts and in part by the phenomena selected for study. For example, in quantum physics it is possible to view light either as waves or as particles, depending upon the measurement technique used and the research question at hand. We create variability by placing discrete entities into a single category and looking at two or more of them using one or more additional categories as variables.

We create reality each time we select among alternatives. Regrettably we have but one life to live in this plane of existence and the present is the eternity in which we all must live. When we select one television program over another or over mowing the lawn, we have created our reality.

Moreover, in the social sciences we create additional realities to "explain" the realities we select and create. Economic theory holds that we select among alternatives in a "rational" manner and that the things selected have more "value" than the things not selected. We assume we can place a value on the alternative selected and imply that we can place a lower value on alternatives not selected. The concept of opportunity cost was created to "explain" the selective creation of reality. Furthermore, the concept closes a rather obvious conceptual circle.

Part of our reality is created privately and we do not attempt to share it with others. Other aspects of reality are negotiated with others and determined through consensus or at least an agreement not to disagree anymore. We will never know the perceptions and conceptions of another person. If I could see through your eyes, what I normally see as white might appear to be green. If you could see through my eyes, what you see as white might appear to be purple. Nonetheless, we have both agreed to call the green and the purple white so we will concur that your shirt is white. Such consensus is usually referred to as intersubjective agreement. What we call the "objective" approach in science is based upon a number of negotiations which have transpired over the years in conversations, journals, and books. We have accepted certain standards for scientific endeavors or have agreed that further discussion is not productive. "Objectivity" is just another set of intersubjective agreements.

Some people have greater skill in negotiating reality and "truth," they may have greater power, or they may have considerable influence and consequently have a strong hand in the determination of reality based upon intersubjective agreement. Nietzsche once wrote, "...the real philosophers are commanders and legislators. They say, 'It shall be thus!' They deter-

mine the 'whither' and the 'to what end' of mankind---having the preliminary work of all the workers in philosophy, the overpower of the past, at their disposal. But they grope with creative hands toward the future---everything that is and was becomes their means, their instrument, their hammer. Their 'knowing' is creating." I would add that many others play similar roles including businessmen, scientists, teachers, governmental administrators, etc.

We are often unaware of our creation and negotiation of "truth" and reality. We accept what we have learned and use it creatively without question. We accept social order including interpersonal interaction and economic transaction as "natural." Yet as Berger and Luckmann (p. 52) have pointed out, "Social order is not part of the 'nature of things,' and it cannot be derived from the 'laws of nature.' Social order exist only as a product of human activity...Both in its genesis...and its existence in any instant of time (social order exists only insofar as human activity continues to produce it) it is a human product."

We now return to an issue raised earlier, the limitations of science in the study of human behavior and in communicating research results with other people. We must first focus our attention upon the scientific study of behavior. Any social science approach is used like all other knowledge systems to reduce the complexity of the environment. Human behavior is a continuous stream which occurs day after day and we cannot hope to deal with all of its variety and richness. As a result we only deal with limited aspects of human activity. When specific areas of inquiry are selected, it becomes obvious that an increased number of categories are required to account for the variability encountered. After all science advances with increased specification. As specification increases, it becomes more dif-

difficult for any researcher to remain aware of much of the behavior of the people under study. Consequently, any research report which meets contemporary scientific standards usually tells us very little about a wide range of activities which may influence the specific behavior under investigation. For example, T. W. Schultz noted that some growth models in economics have treated institutions as givens or as a part of the "state of nature" while others have treated institutions as independent of economic change. Economists have studied the management of capital, labor, and technology on farms while ignoring the social structure which supports agriculture. Anthropologists have studied the social structure of rural communities while ignoring the economic aspects. It is clear, however, that we cannot account for economic behavior by the study of economics alone and we cannot account for social structure by the study of social structure alone. Even if economists, anthropologists, sociologists, etc., worked together, we would never be able to adequately describe and explain the behavior of farmers or anyone else. We view brief instances of their lives but they live their lives on a full-time basis. While one objective of science is to generalize, increased specification reduces the ability to do so because of our limited capacity to control information. Also, the number of specifications are limitless, they are created by scientists and are limited only by the creativity of their minds. We are caught in a double bind, to have confidence in our results we must increase specifications but in the process we lose sight of the subject of inquiry, people living in a particular time and place.

Social scientists have tended to follow the scientific paradigms created by the physical scientists. Becker (p. 387) noted that this narrow positivist approach which seeks to analyze separate and distinct aspects of behavior was bound to fail. Because of the limited realm of inquiry in physics

and the degree of control a physicist can exert over the phenomena, the positivistic approach is plausible; however, as Ritchie (p. 186) has noted, the approach has encountered serious difficulties in biology. Given the complexity in human behavior, these difficulties are compounded in social inquiry. Boulding (1968, p. 9) commented that at the level of understanding human behavior "...it may be doubted whether we have as yet even the rudiments of theoretical systems." Wittgenstein (p. 6.52) may have been correct at least for the foreseeable future when he suggested, "...that even after all possible scientific questions have been answered, our problems of existence have not even been touched upon."

Despite the limitations in science, we remain in the business of the creation of social "fact." It can be argued that social science works and I agree. We create "truths" in which we can have a degree of faith. Social science works best, however, when the "truths" discovered are passed to non-scientists who have the power to construct social realities. Let me explain. We create approaches based upon theory, method, and the phenomena studied. As would be expected, a close congruency is created between disciplines and the environment. In recent history as the practitioners of the disciplines, especially the economists, became more proficient, the information created was used in government and business. What began as academic discourse became a working culture used to guide decisions in important sectors of society thereby increasing the congruency between scientific approaches and the social and economic environment. Consequently, the descriptive and explanatory powers of social science increased. The view that science works best when the categories created become part of the knowledge used by persons in positions of power is supported by experiences in developing nations. Our descriptive and explanatory growth models work much less well in the Third

World.

We now turn our attention to some of the limitations present in communicating results with policy-makers, planners, etc. All social scientists specialize in one narrow aspect of behavior and the advice we give is based upon a rather narrow range of data. Planners, policy-makers, etc., however, demand that we generalize, they want to create programs for all farmers, all workers, etc., and expect us to provide valid information concerning a broad population. Planners, administrators, etc., may have had very different experiences than have scientists, may have created different realities, and may be unaware of the fragile base of social science. Furthermore, they want information immediately so they can get on with the job. Consequently we have little time to negotiate a reality concerning the limitations of what we know and its relationship to the program envisioned. There is a jump in levels of abstraction from the specific data developed by scientists to the generalities used by planners and the relationship between the specific and the general is often tenuous. Nonetheless, the "truth" we create is used and reinterpreted many times. Policy-makers pass the information on to program administrators who, in turn, pass it along to the population for whom the program was developed. What started as specific information based upon scientific inquiry becomes a social reality and, in some cases, it is difficult for the scientist who created the information to recognize the results of his handicraft.

Scientists are often unaware of their blind spots when they do give advice to policy-makers. As Barkley has noted, "Too often, the economist has been asked a quick and pragmatic question and has responded with a quick and pragmatic answer. How do you eliminate poverty? By giving people more money...How do you improve incomes in agriculture? By supporting the price

of grains. These questions have been given quick and explicit answers but those providing answers have not taken time to learn of possible side effects the answers might bring." The same is true in other disciplines. Frequently, scientists are not aware or ignore the limits to their knowledge. As noted earlier, all knowledge systems tend to be circular and closed and we tend to ignore other viewpoints. While space limitations prevent a discussion of the topic, it should be mentioned that the information we create may be more useful to one group than to another and can possibly give advantages to some at the expense of others. When we assume that knowledge is adaptative, we should always consider to whom it is adaptative.

Knowledge produced through scientific inquiry has another limitation when used in program development. Our descriptions and explanations are based upon a narrow range of information and when we attempt to generalize to other circumstances, we should always mention that our statements hold ceteris paribus, "all other things being equal." When we deal with responses to known phenomena or similar conditions, we have some idea of the unknown variables implicit in ceteris paribus. On the other hand, when we are asked what the impact of some program will be that has never been tried, we have little information on which to base a prediction. Science deserts us at this point as does every other knowledge system. Most of us have not been trained as program planners, rather we were trained as scientists, and our knowledge of the operations of programs may be limited. It is wise at times to say that we do not know.

Where does all of this leave us? I think that we must accept the limitations of the scientific approach to the study of human behavior and attempt to make policy-makers, planners, etc., aware of these limitations. We should remain mindful of the role we have had in the past in the creation of social

reality and in this light accept the responsibility for the consequences of our statements. Given the limitations of science, I believe we should support less centralized planning and permit local people to keep their resources at home, set their own priorities, and assume responsibility for their lives in as far as possible. Schumacher (p. 250) notes that the administrators in any large organization are in a difficult position. They carry the responsibility for everything that happens without having the information nor the time available to make adequate decisions. On the other hand, we do live in a complex and interrelated world and some central planning is necessary. An important task for the future is to determine the levels at which programs can be most effectively carried out and the information which will be required to assist in the process.

Despite the limitations inherent in the use of scientific methods in social inquiry, I believe that it remains the single best way to find out what is going on in the world. We must be very careful to determine what kinds of questions can be answered and what kinds cannot be answered through the use of scientific procedures. There are areas in which we can work with some effectiveness. First, we can evaluate programs and study the creation of social reality by policy-makers, planners, etc. Do programs really produce the consequences they were intended to produce? What are the unintended side-effects of programs? Who benefits and who is disadvantaged by policy decisions? We have skills which can be put to use in answering these and similar questions at local, regional, and national levels. We may never be able to answer the question of what will work but we can determine if things are not working as intended. Second, social scientists can monitor other social processes which may not be directly related to policy decisions but which may pose a threat to one or more segments of the society. Environ-

mental degradation, social costs of technology, inequality of opportunity, health care, etc., the list is endless and these things require constant scrutiny. John W. Bennett once suggested to me that the social sciences would be well served if more of us behaved as investigative reporters. I believe the monitoring process I have suggested is related to such an investigative task.

In order to evaluate programs and monitor social processes, we must work toward more inclusive paradigms or approaches such as the one proposed by Simpkins based on the concept of scale. A great deal of effort needs to be directed toward the development of a more unified theory of human behavior in which the diverse aspects of behavior studied by the various disciplines can be organized in a way which can be related to specific populations. It may be that such a unified approach is impossible. Certainly we are never going to be able to deal with human creativity and the diversity of behavior that it produces. Nonetheless, such a search will be useful if it only reminds us of our limitations from time to time. Such reminders are needed because as noted earlier, all systems of knowledge tend toward circularity and closure.

Finally, even if we only evaluate programs and monitor social processes, we will continue to create social "facts" and be involved in the construction of social reality. When we embark upon any research endeavor we must remain aware of the possible consequence of our actions. We make difficult decisions and there are no clear guidelines to follow. Becker has suggested that we give some thought to the ethical and moral issues involved in social inquiry. We claim that we are not biased but, on closer inspection, the claim that there is an absence of bias is in fact a bias. I believe such a claim is an attempt to avoid the responsibility for our findings and state-

ments. There are no value free or neutral paradigms. Furthermore, we cannot cling to our present approaches by simply claiming that they constitute the best viewpoint currently available. While they may offer us some security and provide a consistent framework for exploring the world, they are used at some cost to ourselves and to the people whose lives are changed because of the realities we have helped create. We must become involved in determining the costs of our descriptions and explanations. As we become more aware of our limitations and our role in the creation of social reality, I believe that moral and ethical questions will weigh more heavily upon us.

I have one last thought to share. Scientific disciplines are limited because they are systems of human knowledge. On the other hand, since we create them, scientific disciplines are unlimited, they can be so much more than what they are.

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