

An air of mystery surrounds the question, "What is human science?" A simple answer would deny the complexity of the subject. My response, however, provides a working definition of human science as well as communicates the importance of this vital research field.

The popular definition of human science sets it apart from the application of natural science to the study of human phenomena. The approach I prefer goes beyond this polarization in order to view human science as a field of study that seeks deeper understanding not only of the maladies of humankind, but also the relevance of those findings for present and future generations.

My approach to science is generic, meaning that I don't favor one form of scientific investigation over another. Nevertheless, since my professional work concerns human beings, I term my studies as human science. As the forms of science differ, or perhaps more accurately, advance, so do the forms of method.

As a research methodologist, I concentrate my work on those research methods which scientists use to study human phenomena. I term such manifestations of inquiry human science research methods. But in the passion of the pursuit, a researcher must not ignore the historical origins of and contributions to methods. He or she must build upon and improve them.

For me, scientific investigation conveys the idea of discipline. It is first a process, and second a result. The process is exploration by

means of strict rules and procedures. The result is discovery. The process is a *way* of knowing, and the outcome, some form of knowledge (in this case, about human beings). Recently, scientists have come to understand the scientific process as more creative than previously assumed. Consequently, some forms of science involve more creativity and innovation than discovery.

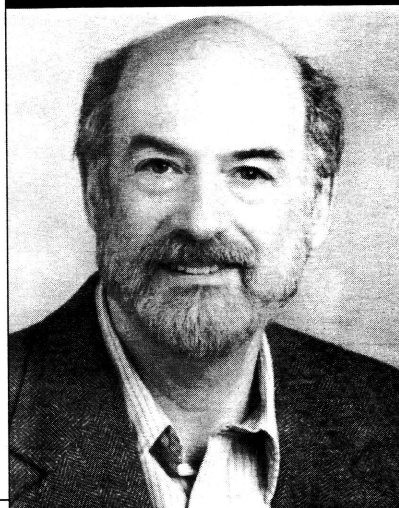
Today, knowledge has a more temporary, transitory quality, as scientists create more useful manifestations of the knowledge they gain. Scientists periodically revise what they learn in order to reflect their understanding of what it means to be human.

In traditional forms of science, such as the natural sciences, it was once assumed that the scientist, a skilled observer standing somewhat aloof from what is studied, need only apply the proper methodology to reveal the workings of Nature. The perception was that knowledge lay dormant until a clever scientist uncovered it. Objectivity is a salient example of one historical assumption which influenced the scientist's attitude toward and conduct of inquiry.

In the last century, it was recognized that the knowledge of the scientist is both public and personal, both socially-based constructions confined by the limits of the scientist's world view. One interpretation of human phenomena may not represent those of other scientists or even general laws of Nature. Only active scientific reflection that includes interaction with the phenomenon studied

# The Three Arenas of Human Science Methods

by Arne Collen, Ph.D.



and participation in an ongoing dialogue and critique of findings invites new methods of discovery and innovation.

Scientists devote much time in the process of discovery and creation to both the phenomena being studied and their methodology. They invent, refine, and improve their technologies, techniques, and means of inquiry in their pursuit of knowledge about human beings. There is an important and reciprocal relationship between what we know and the science we employ. For example, technology leads to advances in scientific knowledge and vice versa.

Each form of science serves somewhat different interests among scientists. And each form limits what we can come to know about each other. Though the usual outcome of participation in debates about legitimate forms of science is to favor one position over another, I believe that there needs to be more recognition among scientists that multiple world views are relevant and that our methodology can always stand improvement.

There appear to be three arenas of inquiry that serve to isolate scientists from each other, when in fact they can be used more collectively for a thorough understanding of the human condition. The natural science world view, which I will call Arena 1, appears to involve the discovery and formulation of knowledge which promotes public and consensually supported explanations of human phenomena. The humanistic world view, which is Arena 2, appears to emphasize the personal understandings of the scientists and research participants engaged in the inquiry. Whereas the first arena is best known for its observation of and experimentation with human beings, the second is best exemplified by hermeneutics and phenomenology when applied in forms of disciplined inquiry to the study

of human phenomena. Neither is more important than the other. Each provides a different perspective to come to know the phenomenon.

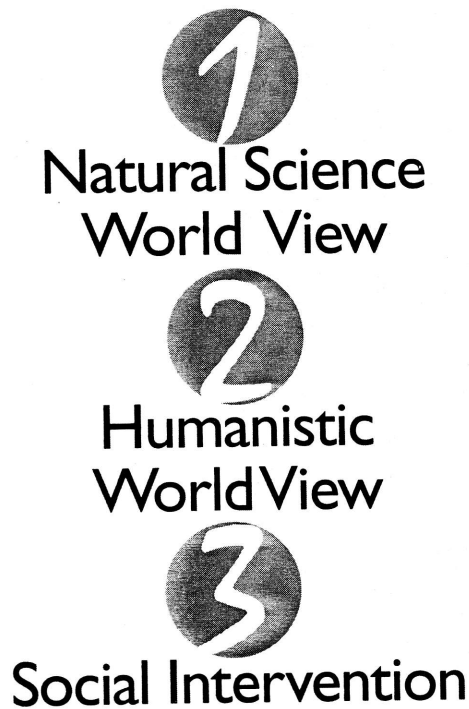
A third arena emerged in the middle of this century, whereby the main aim of the scientist became the amelioration of human conditions. This form of inquiry has become known interchangeably as critical/social action science, social intervention, or participatory action research. Its methods of conducting science often clash with those of the first and second arenas.

There is no agreement among scientists as to what constitutes scientific interests, scientific method, or scientific knowledge. The very foundation of science has been challenged in regard to those

assumptions. Is it possible that knowledge can represent explanation, understanding, and amelioration? Are the means that scientists use to fulfill these interests legitimate forms of scientific method? These questions represent controversial issues in science.

It is interesting to me to see the fruitfulness of attempts to meet the interests associated with one arena by means of methods historically affiliated with another. To those who raise objections to paradigmatic cross-breeding, I think the evidence is that these daring ventures have encouraged rather than impeded advances in human science methodology.

I am proud to say that Saybrook is one of the places where one can see innovative transdisciplinary research. Such innovation also helps scientists discover the methodological concepts and principles that are isomorphic across the human sciences, providing a generic and stable basis for human science. Thanks to these scientists willing to risk nonconformity to paradigmatic boundaries, while insisting upon rigor in their methodology, people interested in studying human phenomena today have



more viable choices and guidance for their inquiries than ever before in the history of science.

It is most advantageous for me to work with the three arenas mentioned above because I think they are not contradictory or oppositional. On the contrary, they have an important complementary relationship. I am currently witness to many scientists in Europe and the United States who are exploring the uses of human science research methodology. I can provide two examples. Naturalistic observation (a type of methodology within arena 1), non-participant observation (arena 2), and participant observation (arena 3) may be combined to construct an observation methodology, which is often the case in ethnographic research in anthropology and sociology. In organization/ industrial psychology and management science, a social action research project may involve a survey instrument (arena 1), followed by research interviewing (arena 2), and finishing with focus group discussions (arena 3), from which the researcher seeks convergence of findings in order to make recommendations to improve the institution.

In sum, I believe that the three arenas demonstrate the varied interests among scientists, the array of methods now available for studying human phenomena, and a distinct set of purposes which the scientist must prioritize when engaging in human science. Arenas of inquiry and their affiliated methods reveal the more timely manifestations of human science — perhaps more aptly described as a meta science — emerging at the end of this century. The arenas reflect the underlying beliefs and assumptions that influence the conduct of inquiry. I expect more arenas to emerge in the coming decades.

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science appear to be a natural progression in the history of Western science arising from Western European civilization. While advances continue to be made in each arena of methodology, I think the commonality of the human experience compels the evolution of a more generic, yet multi-dimensional approach to human science. This realization is leading researchers to attempt more complex methodologies and more ambitious research projects that cross paradigmatic boundaries. We need all kinds of human scientists to study our complex problems. Consequently, the emergent human science must be more systemic and transdisciplinary in nature, without denying or minimizing the importance of the philosophical and research traditions

that contribute to it. Both the specialized and generic emphases must be advanced and integrated in their application to the scientific study of human nature.

Our challenge as human research scientists is to point the way to fruitful combinations of methods from these three arenas which can further the multiple interests of those who depend on the human sciences to address the human predicament. ■

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Arne Collen has been an executive faculty member at Saybrook since 1978. His research focuses primarily on experimental and systems research methods, and he has been instrumental in the development of the courses in these areas within the Saybrook curriculum. Dr. Collen is an active contributor to the International Society for the Systems Sciences and the European Meetings of Cybernetics and Systems Research. His research interests include applications of systemic thinking and methods to graduate education and human science research methods.