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ABSTRACT

Neither the scientific nor the humanistic research paradigm is completely appropriate for the education field. Human service situations yield research results that are tentative descriptions or generalizations due to continuous change. An action research paradigm should reflect the ongoing need of the subjects to act without waiting for research results. Action research has the following characteristics which make it suited for the nature and requirements of the human services professions: (1) ongoing tentativeness: (2) recursions, or infinite revisions: (3) empirical evidence and intersubjectivity: (4) connotative definitions; and (5) collegial sharing. Appropriate fields for action research include macroeconomics, diffusion research, and clinical medicine. In all three fields, there are areas where certainty dissipates, or where the human element intrudes. To relegate education research to the hazy realm of "art" denies the possibility of alternate methods of inquiry, such as action research. (FG)

Action Research: A Paradigm for the Human Services

by

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At present, there are two fundamental conceptions of research dominating scholarly endeavor: the scientific and the humanistic. Although each may, upon implementation, take on a variety of formats, each also reflects a persistent set of criteria typical of its underlying paradigm. Each, in its own right, has been a productive way of increasing understanding and insight. Neither, however, has served such applied, human service professions as teaching, social work and nursing well, even though, taken together, they have dominated the research and the thinking of these fields.

It is the purpose of this paper to discuss some of the major characteristics of the scientific and humanistic approaches to research in order to indicate where each is ill-suited to the nature of the human service professions. It will be a further purpose of this paper to propose a more appropriate conception of research for the applied, human professions in the form of action-research; a set of distinguishing criteria will be presented; and several areas of study where the action-research paradigm would be beneficial to the research in question will be discussed.

The Scientific Paradigm

Minimally, the scientific approach delimits in precise, empirical terms the problem to be studied. Furthermore, it estab. hes the conditions under which a given event will be studied, or, for that matter, not studied. Controls of some kind are usually exercised in order to be sure that the phenomena observed are actually due to the conditions being studied. An untreated petri dish, a petri dish treated with, say, tap water, and a petri dish treated with the variable under study would comprise a typical effort at controls exerted in a biological implementation of the scientific paradigm. A stratified set of samples, in which a number of socioeconomic variables such as family income and years of school attendance are held constant while another variable is studied, typifies the sociological implementation of the scientific paradigm.

In one way or anothe , the scientific approach to research requires the temporary suspension of attention to surrounding conditions and circumstances. Scientific controls assist in achieving a more perfect (obviously, never fully perfect) isolation of whatever is being studied. This temporary suspension of attention is based on the operational assumption that all else will remain sufficiently unchanged for a long enough time to allow the results of the study to be valid when attention is returned to the total context.

Concommittent with the precise delimitation of the problem, the exercise of experimental controls and the temporary suspension of attention is the stipulation of terms so that connotative and/or imprecise meanings are eliminated in favor of definitions generally understood in one and only one way. One example in recent social scientific research can be clearly observed in Jencks' study of equal educational opportunity in which the term, "educational attainment," was stipulated to mean, "The highest grade of school or college completed."[1] Such usually vague meanings as, "the depth of understanding achieved," almost always present

in ordinary usage of the term, were eliminated. This and other definitional stipulations enabled the researcher to delimit the problem of equal educational opportunity to a specified set of conditions, and to hold in abeyance all other circumstances however related they may have been to the object of study.

Another example, perhaps more serious in its potencial for misuse, can be found in Jensen's recently published book, Bias in Mental Testing.[2] "Bias," as one critic noted in reviewing the work, is utilized as it is defined by statisticians and not at all as the public understands bias in I.Q. tests.[3] Notwithstanding Jensen's own acknowledgment of this, he becomes, in the discussion of the results, one of the public, slipping back into the ordinary, connotative and admittedly shifting usage of the vernacular.[4] In other words, while trying to fulfill the requirements of the scientific paradigm in a context ill-suited to science, the scientist, in this case Jensen, becomes involved in poor scientific practice and yields results of almost no use for the human situation.[5]

Objective or detached observation of the phenomena under study is always present as a significant criterion of the scientific method. The problem is how to extract the subjective self from the study so that the results are not influenced by the presence of the researcher. It is not an easy problem to overcome not even for those researchers involved in the physical sciences such as John Archibald Wheeler whose recent investigations into the micro world of quantum mechanics have led him to the conclusion that the act of measuring a particle alters what is being measured. "In some strange way," Wheeler has said, "the Universe is a participatory universe."[6] Notwithstanding, the achievement of objectivity in the macro world has been accomplished in the physical and natural sciences to the degree that the presence of the researcher is considered of insignificant importance to the outcome of the research. A similar level of objectivity for the social sciences has been aspired to but not as consistently achieved.

Linked to the delimitation of the problem, the exercise of scientific controls, the suspension of attention, the stipulation of terms, and the objectivity of the researcher is the importance of replication. That is, a study ought to be reproducible, or, at the very least, subject to being experienced by other independent observers under the conditions and stipulations set forth by the researcher. Verification by others is a key to the powerful results that scientific research has achieved. It is also a major factor in determining the kinds of questions that shall be pursued. Joseph Schwab, in discussing the limitations of scientific inquiry, gave as an example the psychologist who may, "restrict his investigation of the learning process as if the individual learned in a social vacuum, without important effect on learning of the cultural and social milieu in which the learner lives. He (the psychologist) may study, and has studied, the same restricted subject as if learning has no significant connection with need, motive, or inner want."[7] For Schwab, such restrictions are not the fault of scientists but, "conditions forced on us by the complexity of the world and the limitations at any given time of human powers of comprehension."[8]

While the complexity of the world and the limitations of human powers cannot be argued with, it must be remembered that the criteria by which we guide inquiry form the nature of our inquiry. If whatever is studied must in some way be replicable in order for the results to be considered "scientific," then the scientist is not likely to choose questions or allow questions to remain in forms which do not lend themselves to replication. How does a scientist replicate the "inner want" of one hundred children learning how to read--or even of one child? She/he may stipulate out of the study whatever is too "vague" to be subject to verification, or, more likely, avoid the question altogether. The problem, however, is not in the complexity of our world, but in the requirements of the scientific paradigm.

Underlying all of the preceding discussion is the scientific pattern of reporting the conclusions or results of research. If the criteria of the scientific method are adhered to closely, the results will be reported forthrightly regardless of the researcher's own opinions or initial hypothesis. All relevant empirical circumstances, all definitions and controls, all treatments and observations will be reported in such a way that the research can be exactly replicated or in some way empirically verified by others. The results are considered true until new data is developed modifying or contradicting them. This approach is a cumulative one which invites further consideration of results. It is also one which implies a periodic "ending" or conclusion of research. That is, a study or even a series of studies are undertaken, a set of results are reported, and these are then confirmed by independent observers. The results stand as conclusions and may be utilized at some later date for ulterior developments, or simply allowed to collect, in some indexed fashion, with numerous other scientific "conclusions." The scientific "conclusion," albeit always subject to verification, establishes a way of thinking, an expectation that scientific research will have a conclusion or, at least, a point at which a given study comes to an end. The cumulative contribution of a study can be determined only by the course of events. In any case, the study stands as a discrete entity to be either ignored or returned to at some future date.

In essence, the power of the scientific approach lies in its convergence on developing empirically verifiable evidence within a specifically delimited area of interest. This convergence of the research effort is periodically brought to an end via the reporting of results or conclusions, which, if verified, may accumulate with other studies to develop into a broader perception of what is true about reality.

The Humanistic Paradigm

The humanistic approach to research is, in several major ways, in sharp contrast with the scientific approach. The delimitation of the problem is usually not more than an indication of what the area of concern is to be, such as an analysis of the play, Hamlet, or a global

perspective on the spread of the Industrial Revolution or of some musical form such as harmony. Obviously, empirical evidence is utilized in the course of the research, but, given the generality with which the area of study is usually defined, the source from which the evidence is to be derived is not necessarily connected in any direct way to the object being studied. For instance, an inquiry into Hamlet's motives might delve into the life experiences of Shakespeare, find similarities between these and the events in Hamlet's life, and infer that the motives which had led Shakespeare to do what he had done were the same that Shakespeare then attributed to Hamlet in the writing of his play. A similarity is perceived and a link is made that defies verification or any proof other than the reasonableness of the parallel in the opinion of independent observers. Just as plausibly, the researcher might turn to modern psychological studies and attribute motives to Hamlet based on such studies.

In humanistic research the source of evidence is quite unpredictable. Indeed, the effort of the researcher is to look for new or original kinds of sources; there does need to be some reasonable basis for linking the evidence to what is being studied, but inference and retroduction (rather than direct causality and induction, as is the tradition in the scientific paradigm) are quite acceptable. The choice of evidence in scientific research is tightly held to the delimited area of study by the requirement that results be empirically verifiable. The problem is always held to manageable proportions via the above-noted suspension of attention, and the results of the study are to accumulate with the results of studies done by other researchers.

To some extent, accumulation of research is important to the humanistic researcher, especially in the realm of history. But in historical, literary, artistic, or musical analyses, the researcher is <u>not</u> at all concerned with the accumulation of empirical evidence, but rather is seeking new meaning, new insights, new ways of understanding the contribution made by the cultural form in question. In the actual reporting of research, uniqueness of insight rather than reproducibility is the goal. Like the scientist, the humanistic researcher presents a discussion of the results, brings this to an end and awaits <u>not</u> for verification but for agreement or disagreement of the interpretation.

Within this context, operational or clearly stipulated definitions hold little importance. Defining, however, <u>is</u> an important activity for the humanistic researcher. Definitions are looked upon as ways of uncovering the most deeply felt connotative nuances of meaning. Love, friendship, holiness, etc., terms that the scientist would avoid or define in empirically observable ways, would be explored by the humanistic researcher in terms of their unique, connotative interpretations. Definitions are

for achieving new insights not for replicability. Verification is an intellectual activity. The independent observer has only to agree that the meaning achieved is both viable and worthwhile.

Indeed, disagreement is the humanistic researcher's major tool for extending the understanding of historical events as well as of major creative works. The revisionist historians, for example, disagree fundamentally with the motives and definitions which have previously been attributed to certain sets of historical events. In disagreement, they have highlighted events that were sometimes overlooked in preceding accounts; they have demonstrated how the same empirical data can bear a range of meaning. To the extent that others are forced by the ethics of intellectual objectivity to accept as viable their interpretation, they have extended the results of humanistic research in history. Similarly, literary researchers delving into one of T. S. Eliot's works are likely to produce a range of disparate interpretations. Through their efforts to deal with the disparateness of their interpretations, there would evolve a clarification of nuances, a continuing exploration of complexity and, from time to time, the discovery of a new question.

In contrast to the scientific paradigm, the humanistic paradigm does not restrict the quality or breadth of the inquirer's questions. Indeed, the questions are sometimes so complex and so full of nuances, that the responses would seem almost infinite in range and number. This is simultaneously a source of weakness and strength.

In essence, the power of the humanistic method lies in the divergency of its thrust. From some not precisely defined empirical area of concern, the researcher, using a combination of inference, deductive logic and retroduction, undertakes to extend meaning and achieve new perception. Defining, finding new sources of evidence and arranging events so that different emphases arise are some of the means utilized to reach uniqueness of insight. The results diverge out from the empirical base to deal in connotatives and ever-burgeoning complexity.

The Need for a New Paradigm

A research paradigm, as it has been utilized in this paper, refers to a characterizing set of overarching criteria, which is generally adhered to whatever format is actually followed in carrying out research. In this work, the humanistic research paradigm has been treated as of equal importance with the scientific. It is more than likely, however, that scientists are more fully aware of the patterns they are following than are humanists. The above discussion of the humanistic research paradigm is an effort to describe patterns of behavior shared by a wide array of humanistic researchers, and to distinguish these from the more strictly scientific.

We seem, as scholars, to have reached a stage in intellectual development which conceives of important information and, consequently, of important research, as being only scientific. The effort to describe the humanistic research paradigm does reflect this writer's view that there is a great deal of data made available to the world by researchers that is not gathered scientifically but is, nevertheless, important data.

Regardless of the researcher's level of awareness, the collection and utilization of information must follow some design or paradigm. However, the limitation that the scientific mode is the only one that can yield "important" results has weighed heavily on fields such as education and social work, imposing a paradigm that yields forms of information totally inappropriate to the necessary operations of the professionals of these fields. Peripherally, scientific studies do supply data of some significance to teachers, social workers, etc. In the every day, ongoing types of work that can be called public school teaching or social service, such studies are virtually inoperational. Another kind of information collection is necessary.

It should be pointed out that there is a productive, complementary quality between the scientific and humanistic paradigms. The divergent, exploratory characteristics of the humanist often serve to open up new kinds of questions that the scientist would not have come upon without the intellectual struggles of the humanist. One of the many instances in recent times has been the challenge to the economists' conception of the gross national product (GNP) by humanistic researchers concerned with redefining the "quality of human life" and bringing the nuances impiled by such a term to the conception of GNP. There is the liklihood a reconceptualization of GNP will evolve. Although not quite the "stuff" of "scientific revolutions" described by Kuhn,[9] the example does reflect in its small way the renewal of scientific structures that occurs continually in the meeting of essentially different paradigms. The benefits of scientific methodology for humanistic research can be similarly noted. The effort of historians to incorporate scientific methods via the utilization of econometrics as, for instance, in Fogel and Engerman's Time on the Cross,[10] represents a way of limiting both the divergency from empirical evidence possible in historical research and the tendency to overshadow events with the intellectual analyses of one or another school of historians.

There is a symbiotic benefit to be derived from the interactions of scientific and humanistic research which could be interpreted as the balancing of the divergent and convergent orientations to research. Such acknowledgment, while reflecting an essential truth, tends to imply the acceptability of only two overarching paradigms for research: in other words, if one is not engaged in scientific research, then it is humanistic research. Whatever falls between or around the two may be classified as "poor" science or "fuzzy" humanistic thinking simply on the grounds that

it fits neither well. Nevertheless, there have been instances of major intellectual developments arising from research endeavors that fit poorly into the paradigms. The development of Freudian theory is such an instance, based, as it was, on the compilation of a relatively few case studies, a series of reasonable inferences regarding the underlying causes of human behavior that, however, defy verification, and the utilization of definition to achieve new insights. [11]

There really is no established research paradigm that accurately reflects the nature of the work done by Freud. His theory lends some orderliness to the incoherence of the inner self, as well as offering a new way of perceiving self. But, as Peter Medawar noted, "making sense and being believable-in are not sufficient qualifications for a process to be called ... scientific." [12]

For that matter, there is no corresponding overarching paradigm representative of the case study format of research often utilized in cultural situations by anthropologists. While it is true that a generalization may be derived from the empirical descriptions of an accumulated set of case studies, the verifiability of the data is tenuous at best. Were the observations of the case studies never observed again, it might mean the generalizations made were not valid. Or, it might mean certain aspects of a life style had changed. It would be nearly impossible to verify which.

Similarly, with the growing efforts to accumulate <u>oral</u> history accounts, there is the question of adequate replication and verification. What is the scientific worth of, say, the last survivor of the Civil War giving an account of his memories? Is oral history data validly classified as "humanistic" data? In oral history, subjectivity is necessarily part of the data source and the presence of the researcher will unavoidably influence the outcome of the data. Nevertheless, the oral historian is likely to report the data in as objective a fashion as any scientist and tape recordings, movie cameras and the like have made it possible to record and verify the accounting objectively. However, the very nature of first person recall of distant events precludes its being "scientific" data. Nor could one claim that defining, uniqueness of insight, and the like are criteria guiding the oral historian. To the extent possible, the oral historian would be a scientist, but to the extent that the data itself is inappropriate to science, the scientific paradigm would need to be ignored.

It is the contention of this author that the complexity of the world and of human life in the world requires expanding the array of formalized research paradigms available. Minimally, there needs to be a paradigm for the kind of data that is, in its very nature, subjective, and liable to continuous change due to two factors: the participatory relationship that the researcher bears with what is being studied and the capacity of human life

to willfully and unpredictably make changes in its behavior. Oral history, case studies dealing with cultural patterns, psychoanalytical as well as ethnographic studies would all seem to lack a research paradigm representing research activities actually engaged in.

Certainly this is the case in the human service professions such as education and social work. These are areas of research that only on sporadic occasions achieve the criteria of science. As Wheeler points out: "Every science that is a science has hundreds of hard results."[13] Wheeler, in this instance, was making the case for disaffiliating the parapsychologists from the American Association for the Advancement of Science. I should like to make the case that "hard results" are not likely or particularly useful in the human service professions and that a large portion of the research ought to be disaffiliated from the scientific paradigm.

I hasten to emphasize that disaffiliating the humanistic paradigm from major areas of educational research is equally important. It must surely be obvious that the several million teachers, supervisors, and administrators of the public schools, involved as they are with the futures of a vast majority of American youngsters, cannot allow themselves the divergencies to be expected from humanistic research based on an uncertain and subjective selection of the sources of data, as well as on methods of criticism and redefinition geared toward the achievement of new meaning. The operations of any public institution would necessarily come to a halt if such research were utilized to guide daily decisions. Educating is neither an art nor a science: it is an encounter of applied science and personally oriented humanistic interpretations with a set of publically established goals and a disparate array of intellectual capacities, cultural backgrounds and unequal maturations.

Indeed, it is in operational terms that the inappropriateness of both the scientific and humanistic research paradigms is most striking. In particular, the major characteristics of the scientific paradigm so fully ignore the nature of education and of the human services in general as to render "scientific" research such as that undertaken by Jencks in Inequality[14] almost beside the point. Problems come full blown to the teacher or social worker. Conceiving of them in separate and clearly delimitable components that can be studied while other concommittent events are held in abeyance, as the scientific paradigm would require, so distorts their reality that the application of data thus acquired to the "usual" contexts of the human services is frequently inappropriate and, at least as frequently, misleading.

An instance in point are the numerous scientific studies regarding the effectiveness of behavioral modification techniques for carrying cut discipline in the public schools. It is not uncommon in such studies to stipulate the circumstances under which the treatment shall be administered as well as the

specific actions that shall comprise the treatment. The results usually describe the outcomes to be achieved (most likely, the students' compliance with the teachers' directives). The results thus derived verge on being useless for teachers. The contrived delimitations of the study simply do not reflect the interactive situation of 20-30 children in a class, of varying ethnic backgrounds, personalities, circumstances of health and family that render every disciplinary encounter unique. Even when the observable components of a disciplinary situation appear to fit some pre-established description, the "prescribed" technique (i.e., the one which was most successful in scientific studies) may be utterly inappropriate. The last day of school before vacation, or, even, the last hour of the day, or, possibly, a child having had great difficulty in reading a story, and being laughed at by classmates prior to the situation in question, or a mother and father getting a divorce--these are but a few of the many disparate sources of circumstances bearing on the application of disciplinary techniques and which make the replication of any given classroom situation a virtual impossibility. Human service situations are never any more than <u>somewhat</u> similar to each other, even when, as in the case of classroom tests, quantities are used to reflect the outcomes.

On the other hand, humanistic methods of research serve even less well than science for their utilization would tend to increase the subjectivity of human service situations by encouraging each human service professional to determine the sources of data that are to be given importance, the nature of the treatment to be undertaken, and even the continual reformulation of the definition of such terms as "unacceptable behavior" and "reasonable punishment." Obviously, a teacher of midwestern, Anglo background dealing with, say, Pakistanian Americans ought not be allowed such a free range of subjectivity upon which to base disciplinary action carried out in the name of the general taxpaying public. In addition to diversity of classroom circumstances, there are basic, widespread philosophic disagreements regarding not only what is "good" behavior from a child, but what is acceptable disciplinary action on the part of a teacher.

To what extent is the "compliant" child "good?" A scientific researcher would say that the term, "good," must be stipulated if the study is to achieve reliability. It is this requirement for precise denotative meaning which is especially inappropriate in research for the human services. Stipulating definitions, even for operational purposes, often results in an inaccurate representation of the reality of the human phenomenon under observation. In the physical sciences, "hardness" may be stipulated as beginning at some measurable level of resistance without loss of important information relevant to hardness. Such is not the case when emotional, social, and intellectual behavior is involved. The multitude of needs, goals, and standards present and interacting in almost every human service problem makes connotations and other definitional uncertainties the <u>typical</u> rather than the singular [illegible].

Admittedly, people do use terms in ways that may be considered logically weak. "Free enterprise" is an example of a term that often undergoes a shift in meaning even during the same conversation. While a clear stipulation of the term might be useful to a scientific study, such stipulation risks the loss of important information concerning how people understand and relate to their political/economic environment. Such a loss is grave when the data being collected must be utilized in the resolution of human problems. There is a wealth of information to be garnered from persisting obscurities and shifting connotations.

It is not useful to ignore the essentially connotative nature of what is being studied in order to implement a conception of research that posits stipulated denotations. Nor is it useful to delimit for purposes of study, each conflict, need, goal or standard within some precisely defined and "controlled" situation when any, nontrivial, human problem will undergo a continuous and somewhat unpredictable shifting of circumstances and meaning due to the interacting nature of the components themselves and of the mutability exhibited by each in meaning and extension. Certainly, the liklihood of acceptable scientific replication of a human service situation is minimal and, even if achieved, irrelevant to the ongoing mutability of the human situation. The situation simply will not stop long enough for science to get a firm fix on it. Nor does it serve any useful purpose to assume that all else surrounding a human problem will remain unchanged when that is highly unlikely even in the short term. The teacher, the social worker, the nurse must confront a total human situation in all of its complexity and uncertainty.

Unlike either the scientific or the humanistic researcher, the teacher in a classroom must act, for not to deal with a child's behavior is a decision having important implications for the child's future. The child will continue to grow up, to pass from the third to the fifth to the seventh grades. For the nurse and social worker, the need to act is equally as strong. The client requires services. To deny them would have far-reaching implications. The human service professional cannot wait for more certain, or, at least, better demonstrated results before acting. The scientist can suspend action on a result until substantial evidence has been gathered; the humanist can wait until the philosophical and conceptual struggles that go into the reformulation of a definition have subsided before utilizing the definition to achieve further nuances of meaning. Human service professionals have no choice but to act and this is a circumstance which must be brought into a research paradigm capable of reflecting the nature of the data to be accumulated and the utilization to be made of such data.

Scientific and humanistic researchers both engage in periodic presentations of the results and conclusions of studies undertaken. While neither conceives of their conclusions as impervious to the import of new or contradictory data, both conceive of research studies as discrete entities which will reach an end. The mind set is to have conclusions

or final products. The mutability of human situations and the continuous quality of cultural change make such an approach to the reporting of results inappropriate. Human mutability is, to a considerable extent, a reflection of complex internal factors controlled by each individual in a way not synchronized with the mutability of other individuals. The mere fact that the behavior of a human being is under study can cause the individual to want to change and to change so as to be distinct from others. Unsynchronized intentionality is as characterizing of humanness as the trait of hardness is characterizing for a stone or sharpness for a knife. The complex behavior typical to education and other human service situations involves the repeated exercise of unsynchronized intentionality which creates continuous change, not periodic change. The reporting of "results" and "conclusions," usually labelled as such, tends to fix the study of human situations into discrete entities rather than reflect the ongoing change so typical of complex human situations. Implicit in the conception of ongoing change is the concommittant conception of ongoing tentativeness. "Results" in human service research must be tentative descriptions and/or generalizations which are expected to undergo change. This is a very different conception from the one that awaits verification or the arrival of new data before revising conclusions. It is a conception more consistent with the accumulation of data derived from complex human situations continually undergoing the operational effects of unsynchronized intentionality.

The Action-Research Paradigm

The need for research will often insure that the research will be carried on regardless of the appropriateness of the available paradigms. However, when the research paradigm bears qualities which cannot reflect the contexts within which the research is to be carried out, the adaptation of research formats is likely to become farfetched or, even, to override the criteria which it purportedly follows. As an instance in point, the definition of "educational attainment" proposed by Jencks in his effort to meet scientific criteria, and noted earlier in this paper, is farfetched, for the term, even in educational circles, persistently has an array of connotative meanings well beyond the "number of years one attends school."[15] As adaptation of the research format becomes increasingly farfetched, standards for acceptable research are employed with increasing laxness (not to say haphazardness).

In the case of action-research, the term itself has arisen as a way of escaping research criteria--especially scientific research criteria--that cannot reasonably be adapted to the human service context within which the research is carried out. Unfortunately, as a reaction to inappropriateness, the term action-research has tended to become a "catchall." Without any uniform set of criteria, the accumulation and defensible utilization of data is extremely difficult, if not unlikely. The result may be that instead of a new conception of research developing, a reaction

to the haphazardness will impose even more stringently the tenets of the scientific method.

An action-research paradigm would have to reflect in its set of criteria the applied nature of the human service professions and their ongoing need to act, a need which cannot be delayed until research results have achieved a pre-established level of surety. The paradigm would recognize, for instance, that regardless of the state of the research dealing with, say, how young children are most effectively disciplined, teachers would go on disciplining students. The importance of shifting contextual circumstances and of circumstances only secondarily related to the object(s) of the study would need to be given attention at the very least by not assuming that all else will remain unchanged while the object(s) is under study. Furthermore, there must be some overt, conscious acknowledgment of the continuous cultural changes in human behavior that are likely to render any "conclusions" obsolete within a relatively short span of time.

The following is an effort to set forth criteria for action-research which could act as a guide for the development of research activities suited to the nature and requirements of the human service professions. The various criteria may be grouped and characterized by the following terms: Ongoing Tentativeness; Recursion; Empirical Evidence and Intersubjectivity; Connotation; and, Collegial Sharing.

ONGOING TENTATIVENESS. In action research, continuous cultural change as well as the unsynchronized intentionality of individual human beings would be reflected in the elimination of "results" or conclusions typically presented as the culmination of a scientific study. The "conclusions" reached would never be more than tentative generalizations subject to continuous revision. Tentative generalizations would be based on the accumulation of empirical observations and in this way would offer the human service professional a more defensible basis for action, i.e., a better basis for hypothesizing about the best decision or course of action. Action-research must be ongoing in conception rather than periodic and comprised of discrete entities. Instead of verification and/or replication, ongoing revision needs to be the standard followed. Obviously, periodic publication of conclusions is anti-thetical to such a conception.

In addition, ongoing tentativeness must be applied not only to the generalizations arising from the gathering of empirical evidence, but to the very statement of the problems. What is important to understand in the human services and in research related to the delivery of such services is that problems themselves are in constant flux. Rather than clearly delineated, stable parameters, problems shift in their nature and meaning as the context and environments shift. Ongoing revision of the parameters of a problem as well as of the generalizations forthcoming is a necessary characteristic of action-research.

RECURSION. The conception of "ongoing tentativeness" becomes implementable when recursion is conceived to be the major research process utilized. The data, the generalizations and even the problems themselves are resubmitted along with whatever new empirical data has been accumulated to achieved revised albeit tentative generalizations.

In contrast to either the scientific or the humanistic paradigms, the need to act often requires utilizing tentative generalizations as the bases upon which plans for action are developed. In this sense, implemented plans for action may be considered "probes" for ascertaining the nuances, validity, and applicability of tentative generalizations as well as of the problems they deal with. If, for instance, a generalization is made that a given cultural population encourages its members to perform individually before audience-like groups, and a teaching problem has been posed regarding how greater class participation can be achieved, then one probe undertaken by a teacher might consist of developing a lesson plan around each student's solo performance in a pantomime; another probe might consist of a show-and-tell period during which students have the opportunity to tell individually about something important to them. If the show-and-tell period were to achieve consistently better outcomes than the pantomimes, this would be information to be utilized in the revision of the generalization(s) underlying the probe(s).

The fact that the pantomimes did not prove as successful could also be utilized in modifying the instructional problem so that a question concerning the different traits to be found among those responding to one or another type performance would be pursued rather than which type of performance is instructionally most successful.

Of course, science can pose new problems for study which are then accumulated for the purpose of revising and/or checking generalizations. But science does not include in its paradigm the ongoing recycling of the problem in a continuous (i.e., unending) fashion. It would not, for instance, as part of the normal course of activity, posit that, given unsynchronized intentionality, some topics for "show-and-tell" might have come into particular disfavor within a given cultural group, monitor what these might be and what circumstances might have caused the change, while giving up any pretense at reaching a conclusion of such significance that it should be permanently accumulated in a relatively static fashion (usually, publication).

Recursion as the basic action-research process implies that there are no conclusions but rather ongoing, indeed infinite, revision. Action-research formats are constantly calling upon their own results and/or elements for the development of new results and/or elements. Tentative generalizations lead to probes which lead to new data which are then accumulated with existing data so that tentative generalizations may be revised, which will then lead to the revision of the problem(s) and probe(s) which lead to new data, and so forth. Recursion is a mainstay in the conception of ongoing tentativeness built into the action-research

paradigm and seen by this author to be absolutely necessary to any research study undertaken in the applied human services.

It is important to emphasize that in action-research not only are the data acquired subject to revision, but the problems themselves are in a continuous state of dynamic revision. Action-research develops and redevelops the problems by submitting their parameters to a process of redefinition that takes into consideration whatever new data and/or contexts have accumulated.

Recursive results arising from the action-research paradigm are not publishable as traditionally occurs with scientific "results". They are not for this less useful. Their utility, however, remains at a local level. The ethnic traits of Blacks living on the South side of Chicago in a particular school district in a given time frame and posing relatively localized instructional problems are important matters for instructional research even though ill-suited to publishable, scientific research.

EMPIRICAL EVIDENCE AND INTERSUBJECTIVITY. Objective observation and analyses are hallmarks of the scientific paradigm. The effort to avoid the subjective involvement of the researcher in whatever is being researched has tended to eliminate, in studies involving the human service professions, the most direct and relevant source of observation, i.e., the teacher in the classroom, the nurse in the hospital ward, the social worker in a home for the elderly, etc. These are individuals who can give us in-depth information about their shifting human situations. However, the subjective involvement of such observers in their sources is undeniable and, following the scientific paradigm, is usually avoided in favor of the detached observer, such as a visitor sitting in the back of the classroom or the administration of a survey questionnaire. Aside from the loss of a major as well as a direct source of data, the presence of an outside observer or even the utilization of a survey instrument tends to influence the behavior of the human subjects involved. Wisniewski in a recent ethnographic analysis of the role of a dean of education points to some of the failings of typical survey research: "Surveys tend to cast in stone that which is alive and ever shifting. The dynamics of life within institutions call for research far deeper than surveys will ever accomplish."[16]

It is <u>not</u> that objectively gathered empirical evidence is undesirable, but rather that too much evidence vital to the understanding of complex human situations is being lost or ignored for the sake of achieving this scientific criterion of research. In the context of research for the human service professions, the question is how to deal with data that can only be obtained from subjectively involved professionals carrying out their duties under what are frequently emotionally-charged circumstances. The action-research paradigm needs to take into account the researcher's subjective involvement in the data gathered while still acknowledging that such data contributes to the greater depth of study so necessary to the understanding of human institutions.

One major way of dealing with subjectivity is to study oneself in the same way that one would study others so that more "detached" comparisons of behavior may be achieved. A teacher who observes that youngsters from x background chew gum very loudly ought to have a diary of similarly classifiable observations about herself and her family and friends. Questions about values or attributes need to be explored for both the observer and the observed. Such observations, turned on oneself enable logical comparisons to be made and assist in achieving greater objectivity.

Dealing with subjectivity also means finding ways of achieving intersubjectively derived empirical evidence that would serve as the basis for tentative generalizations, which would also be intersubjectively reached. On the surface, this would not appear too different from the requirements of the scientific paradigm and may, indeed, be only one of degree. Unlike "objectivity," "intersubjectivity" is achieved whenever two individuals share a similar (not the same, but similar) experience. There is no need for the widespread agreement and/or reproducibility of experience necessary to the scientific method. Of course, as the number of individuals and the diversity of perspectives brought to data collection increase, intersubjectivity increases if agreement about observations is achieved, and the distinction between intersubjectivity and objectivity diminishes. It is not eliminated. The point here is that intersubjectivity, based on a continuing analysis of subjective inputs in order to discern patterns of similarities or dissimilarities that might lead to tentative generalizations, allows for the subjective involvement of the researcher in whatever is being researched. It allows for several researchers to discuss what they have experienced subjectively and to determine what in their experience is shared in a somewhat similar way.

Objectivity, albeit acknowledged as it is by science to be imperfect, is not a major consideration to the action-research study since tentative generalizations and ongoing revision have been premised as major characteristics of the paradigm. However, if intersubjective agreement about tentative generalizations is to be achieved, there needs to be some established format for recording observations, which would insure that the observations made by one action-researcher could be compared and collected with those of other action-researchers. There are any number of rational bases upon which such classification systems may be developed.

Intersubjectivity implies the utilization of some common, rationally established categories for finding and storing data. Recursion adds an additional requirement to the system of categories utilized: that they be sufficiently general so that the delineation and subsequent revision of problems may occur without requiring continual modification of the categories. This, in all probability, would rule out a category such as "gum chewing," but would allow for one such as "discipline." In the latter instance, studies regarding disciplinary techniques that fail in the classroom, could become changing values about appropriate ways to discipline without any need to modify the category.

It is, of course, reasonable to think of applying the processes of recursion to the classification system utilized so that the categories themselves would undergo continuous revision. In practical terms, if intersubjective agreement is to occur among a number of action-researchers, some relatively stable mechanism is required, which would act metaphorically as a collating center. This means that if recursion is to be applied to the pre-defined classification system, the pace of its application must be considerably slower than recursion applied to data or probes or problem definitions.

The relatively reduced pace of recursion with regard to the classification system is necessary as well because each time the array of categories is changed there is also a change in the nature of the data collected. Such a change could result in discontinuity and the recursive development of data and problems would be in effect interfered with. This does not mean that classification systems should not be subject to recursion but rather that ways of doing so at relatively slower speeds are essential.

This discussion of systematizing observations resembles the activities usually undertaken by ethnographers. Anthropologists in general have relied heavily on pre-defined classification systems to assist: 1) in what is observed, and 2) in how what is observed is stored for later retrieval. Ethnographers, however, have rarely undertaken studies about themselves parallel to those carried out in the field; nor have they regularly confronted their subjective involvement. Certainly, recursion and ongoing tentativeness are not part of their paradigm, and importantly, they usually do not have a need to act.

CONNOTATION. By now it must be evident that the action-research paradigm would not require the stipulation of terms. Of course, where terms are easily and precisely definable, as might be the case with "chair" or "water", denotative definitions would be utilized. What is to be avoided at all costs is the assignment of a denotative definition to a term that in ordinary usage shifts its nuances and even its meaning in ways often far from clear. The development of connotations in action-research means that "vaguely used" key terms would be the object of analysis in order to determine the range of connotations and/or shifting meanings attributable to them and the relationship of varying contexts to the differing interpretations. The action-researcher's own subjective response to such terms would also be carefully observed and analyzed. The need is to understand the actual usage, not to establish a standard to which usage is made to conform. Mapping the extensions and variations of meanings is the more relevant undertaking for the action-researcher.

Parallel to the effort to achieve greater connotational understanding in the ordinary usage of key research terms, is the de-emphasis on the precise delimitation of a problem with its concommittant suspension of attention to other ongoing circumstances typical of the scientific paradigm. A connotational/organismic approach to data collection is seen to be more appropriate in research for the human services. The

collection of empirical evidence is to be guided by broadly defined categories describing in general terms the nature of data acceptable for one or another category. Problems are to rise from and with the data and are to be modified recursively.

COLLEGIAL SHARING. The involvement of human service professionals in action-research studies as researchers is seen as desirable and to be encouraged. The actors need to become the collectors of data not only about the clients they deal with but about themselves and their own acting. Intersubjectivity about oneself and one's own perceptions can be increased by means of some formalized, collegial sharing of data. That is, researchers share their data with other human service professionals acting as researchers, and accumulate the data in some systematic way that allows the development of intersubjectively-achieved, tentative generalizations subject to recursion. Probes, as well, may be accumulated via some formalized system of collegial sharing. It must be understood that agreement via collegial sharing is not verification,--it is simply a way of ascertaining whether observed data should be developed into tentative generalizations. It must also be understood that collegial sharing is distinct from the kind of sharing that occurs via publications. First, the time lag of publication is avoided; second, there is an ongoing review of data to determine what generalizations can be made and agreed to; third, the conclusions of the collegial sharing will be reviewed for revision at the very next instance of sharing.

Up to this point, the discussion on an action-research paradigm has been contrasted primarily with the scientific paradigm. The incorporation of collegial sharing into the research effort is in marked contrast with the humanistic paradigm and its thrust for uniqueness of insight. In collegial sharing the effort is to examine subjectivity for what is not unique. Furthermore, given the public orientation of professional human services, empirically-based descriptions of behavior and the surrounding environments are of paramount importance to the quality of action-research. Inference may be incorporated into the data report, but only as description based on actual observation and only so that collegial sharing and ongoing revision may occur. For instance, the inference that a child's family does not think schooling is important because they never respond to the teacher's notes is not acceptable action-research data about the child's family, but it is important data about the teacher's reactions to the situation. What a researcher-teacher infers about a given situation is important information regarding the teacher. All that could be utilized as data with regard to the child's family, is that they never respond to the teacher's notes.

Some Appropriate Areas of Study for Action-Research

Earlier in this paper, case studies and oral history were discussed as examples of kinds of research inadequately served by the scientific and humanistic paradigms. Insofar as the researcher is subjectively involved in the context being researched, and/or the source of data is

so subjective in reporting data that no verification is feasible while the collection of empirical evidence remains a central concern, the action-research paradigm would appear to be more appropriate than either the scientific or humanistic paradigms. It is, however, important to note that, unlike teachers, social workers and nurses, historians and anthropologists usually do not need to act. In this sense, the paradigm proposed in this paper is not suitable to these areas of research. Action-research is carried out as a way of improving practice and in recognition that decisions must be made in practice regardless of the state of knowledge at any given point in time.

The effort that is being made in this work is not merely to establish, in a formalized way, the action-research paradigm, but to consider criteria of research in relationship to the contexts and utilization of research, so that the paradigms followed will not close out information important to the job in question, or produce information in such a form that it is virtually useless to those most needing to apply the information. The development of appropriate research paradigms is the point. The action-research paradigm is merely one formalization of an array of possible approaches to gathering data.

In presenting research formats which appear to implement or, at least, to be capable of implementing the action-research paradigm, it must be noted that most studies examined tended to aspire to fit the scientific paradigm. That they did so despite the inappropriateness of the scientific paradigm to their endeavors is precisely the problem being dealt with in this paper. Therefore, the intent to be "scientific" or, even, "humanistic" had little influence upon their presentation here as appropriate for action-research.

Macro economics, especially as utilized at the state and federal levels of government, is an instance of a major area of research, which though attempting to follow the scientific paradigm, actually best reflects the action-research pattern. The need to act even when the data are acknowledged to be unreliable, the relative swiftness with which the data are expected to change as well as the unpredictable influence of human intentionality upon the data, the researcher's own subjective interpretation regarding the meaning of data are all characteristics that clearly make present-day macro economics as a suitable area for action-research studies. Indeed, if that perspective were given to the "predictions" of macro economists, instead of the firmness of the "conclusions" so typical of science, the field would not be in the disarray it is presently experiencing. After two years with the federal Agency for International Development, James Weaver, professor of economics at American University, was quoted as having given up on macro economics. He said, "I found it just laughable to give the Keynesian analysis which demonstrates that you can't have unemployment and inflation at the same time."[17]

Beguiled by the measurable quantities in the form of products, money, and the like, which dominate the data of their field, macro economists have talked of "laws" and "principles" much in the way "physicists" have done, as though the nature and work of economics were similar to that of physics. It surely must be obvious that if, instead of presenting laws, principles and frequently incorrect predictions, economists were to direct their concern toward achieving more defensible hypotheses, i.e., tentative generalizations subject to ongoing revision, the quality of their research would benefit. The continuous collection of data, the recursive recall of data to be assimilated with new data, and the utilization of probes via new government programs are already part of the way the macro economists carries out research. Furthermore, collegial sharing of data, even when published as lists of statistics also characterizes economic research. Even the precise delimitation of problems regularly gives way to the typical obscurities of complex human problems. The incongruency of these research characteristics with the stipulation of terms, the suspension of attention and the presentation of research results as distinct entities which can be validly and usefully presented as conclusions undermines the research done. The "predictions" are indeed "laughable" and we have neither good science nor good action-research.

The field of diffusion research, that is, the study of the processes by which innovation spreads from person to person, seems to be singularly involved in a movement away from the scientific paradigm toward the action-research paradigm described in this paper. Michael Radnor, speaking at Northwestern's Center for the Interdisciplinary Study of Science and Technology, noted, "the old classical (scientific) diffusion model doesn't help you enough. It makes too many assumptions that just aren't realistic." What prompted this observation was the increasing gap between what actually happened in business and government and the predictions of diffusion research. Radnor went on to say, "The classical model lent itself to a certain definitiveness and quantification which made for nice, neat research. But it was research built somewhat on a misreading of a phenomenon--that you had something called an innovation that started someplace and whose history could be tracked." In reality, Radnor notes, "what people are adopting two years later is not what was first adopted. There've been significant changes."[18]

With reference to organizations rather than individuals, Radnor emphasizes that organizations do not respond to a new technology, or mode of operation in a vacuum. The responses of an organization depends on present as well as future circumstances.

The quotes from Radnor and others involved in diffusion research could be extended considerably. The point here is that the field in its efforts to be relevant and useful to what might be called its clientele is having many of the same difficulties with scientific research that have afflicted the human services professions. Certainly, it would appear that an action-research paradigm employing recursive processes might be beneficial to that field's research.

Clinical medicine is another area where the action-research paradigm appears to function even though there is no conscious intent to utilize the paradigm. Certainly, the unique circumstances of the action-researcher are well described by Feinstein in his work, Clinical Judgement:

> The area of clinical examination comes from attitudes and qualities that are neither obtained nor easily detected by scientific procedures: the clinician's awareness of people and human needs; his ability to temper the rational aspects of his work with a tolerant acceptance of the irrationalities of mankind; his perception of faith, hope, charity, love and other elements of human spirit and human emotion. These properties of care and compassion, although sometimes dismissed as merely "bedside manner," are the fundamental and most important tools of any clinician. With them, he can often give healing or comfort where science fails or does not exist. Without them, his science is unsatisfactory, no matter how excellent.[19]

The clinician must gather as much scientific data about a patient as possible, must relate such data to empirical knowledge about the patient that cannot be classified as scientific and must make decisions about treatment regardless of the level of surety of the data collected. Significant subjective involvement is unavoidable. "Probes," such as trying one or another medicine to ascertain its effectiveness, are regularly utilized simultaneously as forms of treatment and as ways of obtaining more information. Though the clinician often feels certain about the diagnosis, there are frequent instances where the uncertainty is so great that even the clinician considers the generalizations made not only to be tentative but in need of ongoing revision and data collection. To call this aspect of clinical work an "art" is to ignore the research that can and needs to be done by the practitioner. What, for instance, is the relationship of how the patient describes his/her symptoms and the clinician's diagnoses and treatments, i.e., the clinician's decision making process. The clinician is a major as well as the best source of data in responding to such a question. It is an action-research question that scientists could handle poorly. It is not for this a question to be ignored.

In clinical work, action-research often takes the interviewing format. Usually, a pre-established set of questions guide the interview but no single interview is thought to lead to a final outcome. As noted by Enelow and Swisher: "The astute clinician knows that he may begin his diagnostic studies with the first interview and that each subsequent interview will add increments of data that will increase the size of his 'data bank' about his patient."[20] In other words, modification and revision are built into the interviewing process. The collector of the data, that is, the interviewer, will invariably become subjectively involved in the interviews and will influence the way the data is perceived and interpreted. Collegial sharing is not uncommon in the clinical setting and may happen at various intervals while more data is being collected.

Action Research Not Merely Art

Although action-research is clearly being carried out, these efforts tend to be attributed to a mixture of art and science as exemplified in Feinstein's paragraph quoted above. This, instead of lending rigor to the procedures followed, tends to give the impression that a publically shared way of achieving tentative generalizations and moving toward intersubjectivity depends on individual disposition rather than on the responsibility of professionals needing to serve the public.

The same tendency to assign much of teaching to the realm of "art" has tended to slow the number of action-research studies undertaken in education, where the term, "action-research," has probably received the widest use. The scientific paradigm reigns supreme; if it is not "good" science, it is not a worthwhile study. Then, the thinking goes, it must be art and the moment art is systematized it ceases to be art. While science has produced few results that are utilizable for the classroom, art, by its very conception, is self limiting to the unique personality of the teacher--and there are several million teachers working in public education.

As with clinicians and macro economists, action-research is present everywhere in education. Unlike clinicians and macro economists, some formalized record keeping system that allows for ongoing revision of generalizations and continuous accumulation of data in constant change is not available. What records do exist are to fulfill bureaucratic requirements. To study the transactions which go on in classrooms between teachers and students, teachers must be involved as researchers. Some formalized system of action-research record keeping to enable the occurrence of collegial sharing and the revision of generalizations is necessary.

This author undertook to develop an action-research format for the study of ethnicity in public education.[21] Definitions regarding the nature of ethnicity and its major aspects were developed with sufficient scope so that they could serve teachers during collegial sharing to establish tentative generalizations and to clarify problem areas for which probes could be and needed to be developed. Teachers located in different classrooms, but with youngsters of similar ethnic background agreed to observe and record, over time, certain aspects of ethnic behavior. The way data was to be recorded was also established before observation so that the teachers had a similar basis for sharing their observations. Teachers studied their own ethnic behaviors as well as the types of behavior imposed by the organization of the schools. Generally, they tried to map problems as they arose within each aspect of ethnicity for which they had collected data. For example, teachers observed kinesic behavior of teen age black youth engaged in responding to a question and monitored their own reactions/interpretations of a given kinesic behavior, as well. They then came together to share their accumulated written observations, and attempted to achieve intersubjectively-agreed-to generalizations. These generalizations were subject to revision

at each period of collegial sharing. Probes and the continuation of data collection were interspersed with periods for revising generalizations which then, recursively, influenced the probes. The probes, in this instance, were different instructional, curricular or classroom management strategies. There were no final "results" to report.

In discussing appropriate areas for action-research, the intent has not been to subvert utilization of the scientific and humanistic paradigms, but rather to indicate lacunas in the applicability of either of these paradigms to certain areas of study where research is ongoing and considered necessary to the decision-making process. The power and complementariness of the scientific and humanistic paradigms are not in question. Rather, the effort has been to extend the nature of research undertaken and to achieve recognition that there are types of researchable knowledge which are important types of knowledge and which can increase our overall base of understanding that are not "scientifically researchable."