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A PROLEGOMENON TO THE HISTORY OF PERSPECTIVES IN PERSONALITY THEORY

by

CAROL LAMAN

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

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THESIS DIRECTOR'S SIGNATURE:

HOUSTON, TEXAS

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PREFACE AND ACKNOWLEDGMENTS

I have as many different selves as there are groups of people about whose opinions I care.

William James

The philosophical perspective of this dissertation is one of emergentism. The phenomenological experience cannot be predicted from either the constituent parts or from the properties of the events antecedent to it. The content cannot be adequately understood until the process has been completed because the use of perspectives is not uniform.

The content does not represent a linear, analytic process. Research, in order to be meaningful and not just productive needs to be built on synthesis as well as analysis. A similar process can be seen in Hegel's organization of levels of abstractions. There is a dialectical tripod of thesis, antithesis, and synthesis through which one must move up or down the ladder of abstraction. In a more modern version, this image becomes a triple helix, where the change in perspective adds a third dimension of depth.

Research into any topic can progress through a little theory, a little fact, a little more philosophy and back to a subject again. In order to get deeper and deeper into a subject, perspective must broaden and focus must narrow alternately. The image is that of the tripod which moves not up and down a ladder but deeper and deeper into a spiral or nested set of concentric circles.

The dissertation contains several nested and nonindependent levels of intention. These levels correspond to the four major
sections: introduction, review of the literature, method, and conclusion. These levels are further divided into modular units which can be compared both vertically (to other levels) and horizontally (to other modules within their level). The primary modular division of levels is between demonstrative and dialectic sections. Each module contains several related perspectives which are unified in a molar view of the module.

The temporal progression of the investigation from one level to another begins at the holistic view of the system (which is one of internal conflict), proceeds through a separation of the perspectives and a comparison of their applications (in the review of the literature), goes on to test two possible methods of unifying the two perspectives, and concludes with an alternative which emerges from an evaluation of the unsuccessful reunification of perspectives. The conclusion provides an arbitrary stopping point which contains more questions than answers. The result of the study is therefore an impetus to further growth — a result determined by the original intent of the dissertation and its theory.

One must be able to appreciate the process of interaction to understand the meaning of the theory. And one must be able to recognize that in synthesis there will always be loose ends — emergents — which continually inspire the theorist to seek more facts or ideas with which to modify his theory.

Otherwise, the psychologist, philosopher, or scientist becomes a technician focused on a problem and seeking a solution. After each solution is found some external problem must again be forced
into his thoughts. And learning then becomes work.

Modern educators as social scientists, have attempted to circumvent this problem by emphasizing method rather than content. In theory, the tedium resulted from memorization of not always relevant facts. With rapidly changing times, it was believed that what the child or person needed was a set of programs for "learning to learn." Methods courses are continually reevaluated to determine why they are as unpopular as were the rote-memorization courses many years ago.

There is still no motivation for the student to learn in this setting. Whether the person knows content or method, he still fits the stereotype of "having" knowledge. Humanistic or third force psychologists generally attempt to alleviate this problem by making the content more relevant and the method more interesting, but they still advance a static system. It is a static circumstance parallel to Fromm's state of Possession. The results are contents and methods which increasingly are more specific and molecular.

In contrast, the inherent prototype for the Hegelian-Marxist dialectic philosophy, parallel to Allport's process of Becoming, is one of increasingly abstract growth. The search for meaning generally extends into the never-never land where definition interacts with perception and the result is interesting but nonfunctional.

Using the dimension of perspective to recognize an emergent from these two orthogonal systems requires a comparison of the foundations, underlying assumptions, and purposes as well as a forceful tying together of divergent views.
In an analogous process, the contrasting and comparison of divergent views is an essential element in an education. Emergents serve as the impetus for regarding the process as a never-ending exploration (parallel to Fromm's Being). The growth should tie together practical and abstract systems in the triple helix. Only then can the individual freely move up, down and around the spiral.

I would like to thank those individuals who have given me their views as well as the freedom to adapt those views to my system. An incomplete list would of necessity include fellow students Martha Clark, Randy Kelley, and Royce Watts. Those who have the additional quality of being professors include: Trend Wann, Ph.D., Kenneth Monts, Ph.D., and Lyle Angene, Ph.D. Special thanks should go to various types of supporting people: Doris Murray, Sue Cox, and the many tolerant employees of Westbury Hospital. Finally, I would like to thank the patient members of my committee, Stephen Klineberg, Ph.D. and John Brelsford, Ph.D.

A contribution which requires far more than a separate paragraph was made by my Advisor and Dissertation Committee Chairman, Rudy V. Nydegger, Ph.D. He gave me support when I needed it, guidance when I asked for it, and freedom for reflection and production when I could benefit from it. In addition, each time I became committed to a concept, he provided an equally plausible alternative which forced a further exploration and continuing education.
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INTRODUCTION

Religion cannot disappear; it can only be transformed.

Saint-Simon

Interpretations of a passage vary according to the perspective of the reader. Perspectives which are shaped into a set of beliefs are called theories. When the content of a theory circles back onto the perspectives which informed the theory, it is called a theory of knowledge.

The purposes of theories vary according to the intent of their constructor. The purposes of the theory of interpretation and knowledge in the social sciences supported in this dissertation are functional ordering, understanding, and communication.

Functional ordering, or explanation, refers to the sequential placement of events in their environment which enables the theorist to control or at least predict occurrences. The primary underlying assumption is that these events exist independently and can be objectively defined. Hypothesis testing, either by experimentation or modeling, provides a method for internal validation.

Understanding refers to a process of definitional agreement between the theorist and his interpreter. Definitions are assumed to contain complete explanations of events since they include the non-independent elements of judgment, relation and result. Philosophical interpretation, generally symbolic and relational, provides the method for internal validation.

Communication refers to the interpersonal processing of knowledge,
or external validation. Knowledge is assumed to contain elements of content and perspective which can be integrated by clearly defining and explaining both the assumptions and intentions which underly the message.

The following study of perspectives which circumscribe theoretical content will begin with an acknowledgment of the existence of two distinct trends in the theory of knowledge for social science. It is primarily through contrast and comparison that the perspectives which inform these two theories will become apparent.

If they were both viewed by the same observer from within, the perspectives would appear as two superimposed spheres of equal size and intensity, totally surrounding the individual and coloring his view of the world. However, since one would be red and the other green, it would be impossible for him to focus on both spheres simultaneously. Therefore, two different observers will focus individually on their particular perspective in order that the reader can visualize both spheres.

Jerzy Wojciechowski (1975) presents the first perspective in a systemic view of an ecological knowledge system which draws its energy from a dialectic tension between man and nature. Knowledge is a social fact. The items grow and accumulate. When measured by "scientific methods", the resulting curve of the growth of knowledge is exponential or superexponential. There are general laws governing the organization and change of this system.

A summary of Wojciechowski's theory will be presented in the second part of the Introduction. The philosopher's response to that theory will also be presented for comparison and contrast. Basically,
this response is that dialectical idealism provides for an inherent motion with time rather than a balance which attempts to control time by establishing its own, machinelike motion. The emphasis upon intellectual substance (which contains emergents) is grounded in an inductive philosophy of language. When this theory is applied to the social sciences, knowledge is viewed as noncumulative and relative.

The substance of the author's theory is a viewpoint which rejects systemic or philosophical methods as the correct approach to social science. Systemic thought, which arises out of a scientific framework, inherently stresses explanation and excludes understanding. Its functional communication and structural ordering provide only part of the requirements for a theory of knowledge. The same criticism can be applied to philosophers' principles which emphasize understanding to the exclusion of functional ordering.

In essence, this third view rejects the notion that either perspective can totally meet the purposes of a theory of knowledge for social science, because neither is inherently true. Philosophical knowledge, although it may be the subject matter for an historical investigation, is not history, and systems models, although they may provide an organizational framework for explanation, are also not complete representations of historical processes. A combination of these two approaches, like the combination of the solid colors red and green, forms a murky brown area of confusion.

In their more theoretical and transparent, wavelike form, the two colors can be blended more successfully. And when they are reduced to primary colors and combined with the third primary color (represented in the dissertation by the historical narrative) a correct
fusion can produce a pure white light. This third perspective is not offered as a replacement for either the scientific or philosophical point of view. However, it is evaluated as a method which can make historical investigations, including personality and social histories, more complete.

One of the greatest obstacles to the free and universal movement of human knowledge is the tendency that leads different kinds of knowledge to separate into systems ...

Systems, therefore, strive to enslave the human mind and, in my opinion, their only ascertainable use is to promote conflicts which destroy them, by stirring and stimulating the vitality of science ....

Philosophy and science, then, must never be systemic: without trying to dominate one another, they must unite.

Claude Bernard
1865

Wojciechowski's theory of knowledge is one of the more complete and responsible of the recent attempts to apply systems theory to knowledge sets. This holistic approach to the universe which places knowledge within an ecological perspective accords some function to non-empirical and even non-rational constructs. In addition, Wojciechowski did not deny the value judgments inherent within even the most objective modeler's perspective. His concern for an adequate balance within the knowledge system included the fact that the sub-system's adaptive role within the larger system was not secondary to developing a systemic theory of knowledge.

The following summary, taken from "The Ecology of Knowledge", 1975, will emphasize the general laws which govern knowledge systems, according to Wojciechowski.
Law: "The need to think is proportional to the amount of knowledge available." Wojciechowski claimed that "it is the nature of the intellect" to turn reflection into problem solving. Man does not totally control this reflection because intellectual constructs, once formed, "lead a life of their own, engaging in a dialectical relationship with other constructs and with minds." The net result is always more constructs. Problem solving implies an external involvement. "Hence, the business of knowledge becomes increasingly a social fact and a public concern. The concern results in a desire of planning."

Law: "The necessity of planning is therefore, generally speaking, proportional to the number of units (people) involved."

In planning for ecological balance within the "new realism", one must have a holistic view of the interdependence between two systems. The first system is nature. Nature is the source for the objectified knowledge which is a necessary input for the second system which is the human system. Man is removed from nature because of his self-consciousness. The evolution of the nature system is slow, almost static, giving the man system a relatively stable referant.

The dialectical tension between these two systems provides the energy for the knowledge system, which is a subsystem of the human system. It is through this system that the objectified knowledge from nature is transformed into survival and adaptation information. Knowledge is a social fact: "a concrete reality producing tangible results with and without its knower."

Culture is the social construct (or set of relations) through which this knowledge is then expressed. It transcends the individual in time and space. It is here, in the Weltanschauung, that Wojcie-
chowski found a place for perspective in the knowledge system. He described the Weltanschauung in terms of a mechanism governed by underlying laws. The first of these laws allows for the objectification of knowledge through intersubjectivity.

Law: "All other things being equal, the involvement of the individual with external reality is proportional to the amount of knowledge he possesses." There is a feedback loop from culture to nature to culture.

Law: "There exists an interdependence between the size of the human group, the amount of communications within the group, the degree of objectivity of the knowledge construct, and the progress of knowledge." A large varied, freely communicating, scientific-minded group is at the peak of a probability distribution which describes the "progress" of knowledge as the accumulation of social facts. Divergence of opinion and influence increases this total.

Law: "The need for communication is proportional to the size of the society, the number of groups within the society, and the amount of knowledge available." The development of knowledge is goal-oriented and conscious. All knowledge is practical and "all observation is transformation." The purpose of man's knowledge is production of either sense data or explanations which affect his relations with the environment. This affect can only be produced by inter and intra-system communication along the lines of modern linguistic or cybernetic information transferring models which refer to demographic factors. The relations then "must be considered as dialectical, i.e., two-way causalities occurring in an ever changing situation."

Law: "Man's behavior is proportional to his knowledge."
Law: "Knowledge always has a consequence which goes beyond the act of knowledge." Although individual acts are functional, the overall evolutionary import is not clear. Social facts may be an adaptive mechanism in relation to nature or a non-goal oriented, coexisting evolutionary process. This process may be parallel to the biological "descent with modifications ... to be supplied by the trial and error method and natural selection."

The control of nature should not be the only concern of the knowledge system. There should be a balance of internal, man system, and nature system functions. It should include value functions for the man system. The values help man put nature in perspective and thus act as guidelines for his relations with the ambient world.

One particular relation is the human system's subordination to a spatio-temporal system. Evolutionary change, one of the properties of this larger system, is therefore inevitable. "The rate of obsolescence of forms of existence, i.e., of the necessity to transcend these forms, is proportional to the level of intellectual activity."

Wojciechowski defined man's specific habitat as a rational cultural system within a sphere of reason. The development of the individual and the progress of man can be measured in relation to this sphere, the culture, and the "scope and depth of his awareness and responsibility for his behavior."

The crucial question of ecological balance is then inter-systemic. The man-system may not be self-regulating in its balance with nature. Therefore, an active control instituted by the only conscious agent, man, is necessary. "The problem of ecology is one of achieving a dynamic relation of equilibrium among different elements
at the same time assuring them the best conditions of development."

The best method for investigating the problem and devising a solution, according to Wojciechowski, would be the quantitative evaluation of human history. Man should measure the cultural changes, the pace of creative activity, etc. In a sense, man can thus gain mastery over time by being aware of it. Once he is the master, man can use time in his evolutionary and ecological planning. (This method of quantifying the history of personality theory will be tested in the Method section.)

Wojciechowski described the human knowledge evolution as a history of the progress of objectification of knowledge. He further stated that this limitation has dehumanized cognition by quantifying knowledge and excluding other aspects of reality. "It cannot therefore, fulfill satisfactorily the role of the intellectual development necessary for the harmonious development of man." Complexity is, thus, an understatement of the dialectic interchange of cause and effect between living beings and the environment. And it is only the complexity which systematists can handle within their theory and with their technology.

Western culture, in particular, is biased toward practical knowledge. The primary aim of classification is facility of retrieval rather than philosophical insight or synthesis. In view of multiplying language communities, "the much glorified progress of knowledge would be a new version of the building of the Tower of Babel." When the past roots of these languages are devalued, current knowledge seems functionally autonomous. Therefore, "the value of the past is inversely proportional to the creative, intellectual capacities of the present."
Thinking, even creative thinking, is functional and part of the structured knowledge system previously described. The function of all types of thinking is "to constitute oneself in relation to these circumstances, thus creating an autonomous being." Paraphrasing Abraham Maslow, Wojciechowski said that "cognizing performs anxiety-reducing functions for man." It transforms the unknown and threatening into the familiar. Theorizing orders and provides balance. The desire for functional control of knowledge must therefore, be in harmony with the objective knowledge of nature and the systemic structure. Information transfer, or communication, is the vehicle for this intersystemic balance.

Wojciechowski's theory has been designed to meet this intent: it provides a structure for ordering information about knowledge and it communicates as much as possible within this explanatory framework. The complement to this refined systems theory will take as its starting point the oft-mentioned but never integrated "human potencies" and values which Wojciechowski acknowledged as crucial features.

According to a number of philosophers who will be discussed in the review of literature, this omission is not an accidental oversight nor a problem to be incorporated into the system at a later date. It is a necessary and inherent qualitative difference in substance which makes value judgments and the human side of social science unsuitable for inclusion in systems models which integrate material data about production and change.

Historically, systems modeling has been so far removed from the original philosophical meaning of scientific methodology that understanding is now excluded by the principles of explanation which depend
upon operational definitions and limiting assumptions of the hypothetico-deductive model. Understanding, which is the philosopher's goal, is a qualitatively different experience from this type of explanation. Definitions and purposes are focused upon the interpersonal structural history of meaning founded upon rules.

According to these philosophers, the social sciences are grounded in fictional constructs about human action and interaction which are inherently judgmental and needing justification. It is not the series of neurological movements nor the sequence of physical behaviors which constitute the subject matter for the social sciences. The search for understanding is focused upon the meaning of those acts and must be communicated in terms of justification of constructs.

These constructs are inextricably bound to personal perspective and historical definition. The personal perspective of the observer makes it logically impossible for his constructed viewpoint to be objective. It is context-bound and it is only through an investigation of this context that the observation becomes significant and reasonable. The context, which has its roots in a historical, interpersonal definition, is ordered on the basis of rules rather than laws. The connections between action and result are logical rather than causal and can therefore incorporate dialectic emergents which have no place in the compulsive repetition of systems. There is a continual change in purpose which cannot be understood on the basis of input and feedback. There can be no causal connection because the experiences or constructs are not logically independent.

These philosophers do not contest the value of empirical data, much as Wojciechowski did not suggest the elimination of evaluation.
Particularly in reference to the dynamic nature of the subject matter, the philosophers emphasize the need to integrate empirical and conceptual change in order to establish a meaningful context for historical evolution of ideas. According to their perspective, however, this can only be done by relating change to the value judgments which were made in deciding that an older theory was no longer adequate. Judgment rather than feedback is the context for change in the knowledge system since content is dependent upon theoretical perspective.

The author's basic position will be that knowledge does not represent a system nor a set of rules, but rather the history of human thought. As such, historical methods are more appropriate for the understanding and explanation of the process than are scientific or philosophical methods. The particular historical method which is preferred is that of the story/narrative. This form of presentation permits understanding and induces following. There are both rules and lawful explanations included in the content, but the process emphasizes life rather than order and the general trend is towards expansion and interpretation rather than conceptual closure.

It is no longer necessary, in this method, to define an initial equilibrium state from which the system is set in motion by an external force. Nor is it necessary to define a single purpose or overall program for interaction and change. The reasons and meanings for individual events, the surprise occurrences and the unexplainable, transient circumstances capture the essential lifelike nature of history, whether it be the history of an individual, a social science, or an institution.

This third perspective, borrowed in part from philosopher-historian
Gallie's narrative method and applied in principle to a subject matter which has been systematically presented, will constitute the author's emergent statement. This statement will be more fully developed in the conclusion of the dissertation. In essence, the statement will conclude that the narration of history is inseparable from the historical and personal perspective of the historian. It is only through an understanding of this perspective and an acknowledgment of its inherent biases that the events can be evaluated contextually and constructed presentations adequately compared. The essence and origin of human history is neither science nor philosophy, but story-telling. And the perspective of the storyteller must be included in social science along with the value systems of the scientist and philosopher.

If all pulled in the same direction, the whole world would topple over. Yiddish Proverb

These abstract positions form a murky substance from which to begin a dissertation. Hopefully the water will begin to clear in the next section with a review of the relevant literature on systems and dialectic perspectives. Part A will develop the history of assumptions and purposes in the two approaches and part B will consist of a critical evaluation and comparison of the two as they are applied in the social scientific study of knowledge, the history of psychology, and the history of perspectives in personality theory.

The Method section will compare two possible methods for fulfilling all three purposes of a social scientific theory of knowledge. The hypothesis to be tested is that qualitative and quantitative procedures
can be combined to fulfill these purposes.

Part A will begin with the scientific assumptions of operational definition and causality (or correlation) in an attempt to explain the historical patterns which are found in perspectives in personality theory. The hypothesis to be tested is that personality theories are correlated with environmental parameters in a knowledge system. According to Wojciechowski's theory, this system should contain theories which become increasingly more objective and demonstrative. In order to apply the scientific assumptions to the hypothesis, both personality theories and environmental parameters (historical events) are regarded as social facts or units, operationally defined and measured.

First, in order to arrive at an operational definition of personality theory, some limits need to be placed on the range of theories which are included. Whether or not to include decision models, perceptual and developmental approaches, learning theory, social psychology, phenomonaldotical and/or existential theories is an almost impossible, complex decision. To even begin to attempt a consistent scheme of categorization would be a task far beyond the scope of this dissertation. To rely on the judgment of one of the editors of personality theory texts would be acceptable as a subjective choice, but unacceptable within a historical perspective, since each editor would presumably be biased towards the inclusion of theorists who follow or lead up to the dominant perspective of the particular era in which he wrote.

Journal articles are therefore chosen as the most representative historical presentation of theory which also posses the qualities of
easy accessibility, fairly consistent readability, and fairly consistent limited length and scope. (i.e., they are not long, rambling, incomprehensible volumes of free-associative theorizing nor are they incredibly detailed, massive compilations of interactive, supporting and contradicting facts.) They are focused, intelligible presentations which rarely deal with more than one theory or demonstration of theory.

Narrowing the journals to a manageable, historically consistent level is also difficult. Because of its consistent use as a source and an outlet for personality theorists and its longevity, The Journal of Personality and Social Psychology (formerly The Journal of Abnormal and the Journal of Abnormal and Social Psychology) was selected. It has been in continuous publication and expansion since 1906, the only journal in this area which can meet that qualification. In addition, its editors have included some of the foremost theorists and psychologists in the area of personality theory. Almost every major personality theorist has either been published or reviewed in the journal.

Therefore, for the purposes of the dissertation, and in order to limit the quantity of theories reviewed, an article will be considered to be about personality theory if a) the author defined his subject as theory; b) the word theory (or theoretical, etc.) is included in the title of the article; and, c) the article was published in The Journal of Personality and Social Psychology between 1910 - 1970.

Once personality theory is operationally defined, a quantitative measure of historical occurrence can be observed. A qualitative scale is required to compare the theories on objectivity of perspective, however. A consistent review of the literature on perspectives allows for only one consistency: the bifurcation of perspective. Although
they have different viewpoints, they use different labels and
definitions for their categories, and in some cases they divide
their system in different ways and for different reasons, all of the
major historians of personality theory (and in fact, psychology) have
reached the conclusion that a bifurcated system is necessary to trace
the development of psychology and personality theory. (Few, however,
go beyond that generalization to philosophize on an inherently
dialectic base for this social science.) Included among the above
historical theorists are Watson (1967), Coan (1973), Klein (1973),
to select a bifurcated scale was, therefore, related to related to
research rather than inspiration. Any other type of evaluation would
have been inconsistent with almost all prior study of the topic.

The selection of a particular theorist's framework was more
difficult. Once again, it was regarded as beyond the scope of the
dissertation and also overly presumptuous to consider a totally unique
set of labels, categories, etc. First, there have been several
reasonably acceptable sets of categories already devised which do not
differ very much. Second, one of them, although not empirically
validated as yet, was intrinsically appealing as it encompassed labels
already consistent with the philosophical intent of the dissertation.
Most of the other scales were eliminated initially for "objective"
reasons. Some, such as Watson's, were both too complex (involving
36 prescriptions with several permutations) and designed for psychology
in general rather than personality theory. Fuch's and Kawash's (1974)
reduction of this scale was based on average ratings which contained
no particular perspective or justification for value judgments. Other
scales have not undergone complete philosophical evaluation and would have required much additional effort to design depth into their interaction.

Rychlak (1968) devised a bifurcated analysis, "dialectic and demonstrative", which was not only philosophically well developed but also simple and specifically designed for personality theory. A subjective set of criteria was selected along a forced-choice model in order to operationally assign theories in the journal to a relative position on this dialectic-demonstrative scale.

Once a specific pattern was observed, the various parameters which had been suggested by historians as correlational events were reviewed. Two were selected to formulate an alternate hypothesis which would serve as justification for building a historical model of the knowledge system as it relates to personality theory. Since historical action is obviously not open to manipulation, the proposed relationship was described in terms of a crude model which would demonstrate the interactive system of events.

Thus, in part A, an attempt was made to fit qualitative variables into a demonstrative system. When the expected pattern failed to emerge, a new hypothesis was constructed which would allow for historical modeling and explanation on the basis of existing observations.

In part B, a more philosophical analysis explores the reasons for a failure to describe qualitative patterns on the basis if environmental parameters. The hypothesis which is interpreted is that perspectives are inherently idiosyncratic and that changes are the result of experience rather than events. Since experiences are definitionally the process of human consciousness rather than external
or communal systems, a model is developed to incorporate these changes on a qualitatively different level -- that of philosophical justifica-
tion. This model is designed to permit understanding of the changes which follow from experience. Thus, in part B, empirical considera-
tions (and consequently a degree of predictability and control) are removed in order that the process of theorizing within a perspective can be understood.

In this instance, both methods demonstrate the difficulty of com-
bining qualitative and quantitative or demonstrative and dialectic considerations.

The conclusion will compare and evaluate the application of these two differing sets of assumptions (scientific and philosophical) to the same material. In conclusion, the two approaches will be brought back together and contrasted with a third perspective which emerges from the mixture. This third perspective will then be evaluated as a theory which meets the assumptions and purposes of interpretation in the social sciences.
Fig. 1.1 The scientific viewpoint. Reprinted from C. E. Wegmann, 1939. "Zwei Bilder für das Arbeitszimmer eines Geologen," Geologische Rundschau 30, 391.
Fig. 5.1  The Scientific Literature. Reprinted from C. E. Wegmann, 1939. "Zwei Bilder für das Arbeitszimmer eines Geologen." Geologische Rundschau 30, 890.
REVIEW OF THE LITERATURE

The assumption of the author will be that this review cannot possibly include all relevant studies of knowledge. The attempt will be made, however, to capture the essence of the various positions. The purpose of this section will be to order the information, to convey an understanding of the content, and to communicate the impression that something is still missing and must necessarily follow.

Part A will begin the in-depth exploration of the theoretical distance between scientific and philosophical approaches to social science. The primary controversy between the scientists and philosophers currently becomes substantive in the tension between systems theorists and epistemologists. Both have a long and respectable history, yet both have only recently come to the center of the stage in the battle for loyalty in the social sciences. The historical context of the demonstrative and dialectic perspectives will be evaluated originally in isolation from each other. The historical characters will develop their own perspectives with minimal comment. At the conclusion of each part, the author will present an evaluation which will be biased with the assumptions of the third, complementary perspective.

Part B of this review will examine an increasingly focused subject matter as it is approached from the two distinct historical perspectives of science and philosophy. In each of three areas, the history of demonstrative and dialectical reasoning and investigation will be traced by the individual social scientists. The first area will encompass studies of knowledge as a social phenomenon. The demonstrative
perspective will be focused on the history of ideas and the theoretical perspective on the sociology of knowledge. The second, more specific, area of concern is the history of psychology. Both empirical and evaluative studies will be mentioned and compared. The final section will present theories and models of the history of philosophical orientations in personality theory. The applications of demonstrative and dialectical methods in these three content areas will be evaluated at the conclusion of the review in an attempt to find some common ground which would lead to a synthesis of methodology.

The mathematician must simplify,   
because only then can he begin working.   
The social scientist should not demand realism from the mathematicians models but only pertinence ....   
Anatol Rapaport

General systems theory, although itself a derivative of the functionalism and structuralism which shaped an older, linear analytic paradigm for science, has, since World War II, emerged as a dominant perspective in the sciences. Recently, general systems theory has been proposed as the framework for a unified science which would include the social as well as the natural sciences. This section will present a historical evaluation of general systems theory from the perspective that systems theory may constitute a new paradigm for the scientific viewpoint in social science.

Within the social sciences, the ultimate in systems models is now based on a teleological framework which in principle may be inconsistent with the very foundations of the scientific assumptions of causality. Wojciechowski's systemic theory of knowledge avoids an adequate
conceptualization of these teleological issues and accepts them as
givens. This approach is not unusual within the theory. Since being
lifted whole from the physical sciences to add authority and legitimacy
to the social sciences, general systems theory has seldom dealt with
the philosophical issues of purpose.

Within the physical sciences, teleological models are easier
to accept. Mechanical systems designed by man are programmed to fulfill
the purposes for which their creator designed them. This factual,
present programming is at least consistent with the scientific
philosophers' concept of causality. It can be described as an adaptive,
teleological system within the construct system of the programmer.

Much less legitimate, but still within the realm of possibility,
is the purposeful nature of biological organisms which contain genetic
programs. A theory of evolution can bridge the gap of philosophical
plausibility without reference to a divine planner by representing the
interaction between environmental systems and specific genetic programs
as a process of selection rather than Lemarkian adaptation. Darwinian
sociology in its original form, however, was generally considered an
unacceptable theory of human systems.

The systems theories which have been developed, however, are
generally traceable to one of these two historical perspectives: the
mechanical or the biological model. The problems which originate
between the assumptions and purposes when they are applied to the social
sciences are concealed by the magic of the image and the neat fit
between data and system.

The philosophical entanglement in systems theory arises when
dynamics are added to the structure which organizes information. A
superhuman intelligence, such as would be required to set the mechanical model in motion and give it direction, does not exist within the realm of scientific knowledge. And the constructs which define social systems or human personalities in a biological analogy are invisible creations of the human mind. Only inferential measures of their construed "results" can be obtained.

If time exists only in the present, and includes only those programs which remain from the past, there can be no existing, ultimate "goal" for human knowledge independent of these fictional constructs. A homeostatic goal, although it may conceivably explain some biological or tension reducing state of the organism, does not in general fit with the observable effort of humans to live creatively. Humans analyze and synthesize concepts and make and change value judgments. This creative living is usually done by defining a fictional future or goal states. These constructions are developed in relation to a time which scientific assumptions don't recognize as "real" in its causal properties -- the future.

These constructions are not only future-oriented but also value laden with judgments which define an ideal goal. This fictional goal changes continuously not because of environmental interaction but in relation to the individual's evaluation of this interaction. And since the evaluation is logically dependent upon the interaction, a systemic analysis is inappropriate. In addition, the original identification of a fictional future cannot be operationally, behaviorally, or nomo-theoretically defined and therefore remains outside the scope of systems analysis.

Recent approaches to information processing, especially those which
emphasize a programmed optimization of cognitive tension as a selected organismic feature attempt to attach this teleological feature to a systemic model. These models fit well with an approach to knowledge similar to that presented by Wojciechowski. None, however, have been able to integrate value judgments into a system which contains units which are qualitatively different. The constructions which define purposiveness in the model are fictional judgments outside the traditional scope of science.

A brief presentation of the historical development of systems theory will document how, in the enthusiastic growth of systems modeling, philosophical concepts were added on to a theory whose assumptions and purposes cannot contain subjective, individual judgments. The historical characters in this introduction to systems theory are the social scientists who borrowed from mechanical or biological models not merely to order information, but also to achieve personal and professional goals. Problem solving, technological fit, legitimacy and the assumed need for a paradigm which permits normal science all constituted goals which shaped the incorporation of systems theory into a perspective for social science.

According to tradition, a dominant perspective has historically determined the range of problems and methods of investigation for the social sciences. Two hundred years ago simple, sovereign theories were supported by the observations of armchair philosophers. These theories, however, failed to answer many questions. The knowledge and the methods became available for more than speculation.

More recently, the field has been dominated by linear causality (the relation of two variables) and analytic description (the isolation
of discrete units). An experimental method was borrowed from the physical sciences to support these descriptions.

Systems have been used as explanatory or descriptive constructs throughout the history of social science. Until recently, however, system theories have been the mutations or exceptions to a linear, analytic framework.

This framework has also been incompatible with the knowledge and technology of modern science. The gap in knowledge was the first to appear. Problems were noticed in living systems which could not be explained nor even adequately described by linear models or analytic mathematics.

At first, social scientists, especially in psychology, investigated the possibility that mediating variables or extraneous variables could account for the incompatibilities within a linear, analytic framework. But there were a sufficient number of inconsistencies between observable facts and physical models to suggest that conditions would support a change in perspective.

In biology, a natural science which had also been limited by the mechanistic paradigm borrowed from the physical sciences, the vitalists used mediating variables as an alternative focal point. They postulated a mysterious, unknowable life force which would account for the inconsistencies between physical and living models. This life force would explain the irreversible nature of the life cycle as well as all other metaphysical properties.

Much of the early systems research in the social sciences was predicated on this organismic model. These theorists preferred description by analogy to explanation by analysis. Lacking an
adequate methodology for testing of explanations, they could only compare the birth and death of empires and the psychosocial stages of man to the life cycle of a biological organism.

Although premature in their attempt to restructure the linear-analytic perspective, these theorists did perform the role of revolutionary thinkers. They were more successful in changing perspectives than in offering new, viable theories. Lewin and the Gestaltists both contributed to this process in psychology.

The Gestaltists' primary contribution to the development of systems theory was their assertion that the whole is more than the sum of its parts. The wholeness or unity of experience and organization was used to account for internal interaction as well as teleological behavior. During this period, however, they lacked the methods and the technology to do more than express their discontent and describe phenomena that the linear-analysis theorists had neglected.

Kurt Lewin, borrowing heavily from systems theorists in other disciplines (including Mead in sociology and Einstein in physics) and qualitative mathematicians, was one of the first to attempt an integration of description, explanation, and methodology into a systems theory. He legitimized and popularized the study of a relative transactional state of becoming as a replacement for the historical or reactive state of being which was based upon a physical model. His attempt to incorporate topology and field theory into psychology corresponded to pre-technology analogies in other disciplines.

These analogies were a response to an interdisciplinary dissatisfaction with the linear-analytic perspective. Simultaneously in the social, natural, and physical sciences, problems of interaction,
relativity and purposive behavior disrupted this perspective.

Methodological developments in qualitative and relational mathematics, topology, non-linear and linear differential equations, set and graph theory increased the probability that measurement was possible within these analogous systems.

Technology was the catalyst, however, that precipitated the shift in emphasis from linear analysis to systems. Almost directly disproving the vitalists' contention that unknowable life forces were responsible for interactive, organizational and teleological behavior, the physical scientists began to duplicate the life-like systems features of feedback, self-regulation, adaptability and purposive behavior. Systems engineers in war-related research labs designed open systems displaying these features for rockets, controls, and other mechanisms.

Immediately after the war, and still operating under the halo of a successful physical model, social and natural scientists as well as physical scientists and mathematicians, particularly in academia, began to alter their perspective to fit the new technology and appropriate systems theory. In 1947, biologist Von Bertalanffy first published his interdisciplinary General Systems Theory. Von Neumann and Morgenstern also published their mathematical contribution to systems theory, Theory of Games and Economic Behavior, in 1947. In 1948, Norbert Wiener's Cybernetics contained a generalization of systems properties from physical to social and biological systems. In 1949, Shannon and Weaver's Information Theory further increased the applicability of technological analogy to social and biological systems.
The technology was also becoming available not only to imitate but also to simulate interactive processes. Computer simulation models could simultaneously process structural and functional information. Transactional functions could also be performed by using both positive and negative feedback loops. Imitation, duplication, replication and simulation all favored the probability that systems theory would suffer from the same problems as the borrowed analytic and analogical models. One development in the history of science which has lessened the deleterious effects of simplification and borrowing has been the simultaneous recording of the transition and evaluation of its principles by systems theorists.

In General Systems Theory, Von Bertalanffy prescribed the logical homology of systems as the interdisciplinary framework for unified science. He described this process as the search for logical similarities and differences between and within systems. The benefits which he attributed to the method of homology are that it: 1) expedites theory development, 2) helps avoid unnecessary duplication of efforts, 3) contributes to interdisciplinary stimulation and the unity of science, 4) permits shared technologies and ideas, 5) allows for interrelated, cross disciplinary efforts at understanding, investigation and problem-solving.

It was Von Bertalanffy, and others, acting as participant recorders for this change of perspective that made the transition unique in the history of science. Whether or not Von Bertalanffy's subjectivity led to the exaggeration of more than a list of historical systematists is a much debated question. Von Bertalanffy, as a paradigm cheerleader, insisted that the shift reflected a scientific revolution
in the Kuhnian framework. In his dedication to this new paradigm, Von Bertalanffy worked almost exclusively on the development of a global theory.

It was probably at this point that the assumptions and purposes of the theory began to be separated. As is generally the case when an all-inclusive theory is developed for social science, theoretical models and images began to substitute for theoretical assumptions. Homology rather than causality became the focus for investigation and the purposes were evaluated in the context of already assumed systemic definitions. Judgments were therefore made in the context of how well the model fit the purpose rather than how well the assumptions fit the subject. Methods rather than definitions became the topic of priority. In the social sciences, the desire to become full-fledged sciences contributed to a premature acceptance of what was now commonly regarded as the universal theme for science.

Although psychologists expressed many of the same dissatisfactions with linear analysis as other fields, they were slow to accept the principles of systems analysis. More support was given to the labeling of organizations as systems than was given to the logical homologies represented in general systems theory. Von Bertalanffy labeled several psychologists systems theorists on the basis of their approach to the science rather than on the basis of any intended participation in the theoretical perspective. He included Piaget, Rogers, Menninger, Goldstein and Maslow, and Gordon Allport.

Gordon Allport was among the first to directly relate his theorizing to general systems theory. *Becoming* (1955) outlined a transactional theory of social personality which, in its similarity
to systems theory, avoided the disgrace of being labeled totally metaphysical or unscientific. Allport's later work emphasized the logical homologies within his investigations.

Even at this point, systems theories remained on the fringes of scientific psychology. Gradually they crossed the barriers of sociology and psychiatry into social psychology, organizational and personality theory. Concepts from linguistics, communications theory and information theory were absorbed into perceptual, physiological decision making and information processing. Phenomenologists and existentialists incorporated the active personality system as their key to respectability. Still, however, reference to systems theory is more prevalent than conceptual understanding and application of the principles of general systems theory. Assumptions are neglected and purposes distorted in the search for analogous methods and models which are scientific by association. The content is removed from its judgmental context in order that it fit the scientific system. Systems principles are used to account for facts unexplained by linear analysis or to interactively explain away statistical deviations rather than as an initial perspective.

In fact, the initial perspectives, even within psychology appear more diverse than ever with new subspecialities becoming increasingly differentiated. Sigmund Koch (1974) used this evidence to support his contention that psychology can never be unified under a single paradigm, even one as broad as general systems theory. Koch stated that he has a preference for systems theory because it is a loose, "conceptual template". But he offered two reasons for rejecting this template as a unifying paradigm.
First, Koch contended that because any theory or search is for perceptual isomorphisms, to base an entire theory on generality and cosmic applicability is merely to invite search. This leads to universal but meaningless results. Secondly, Koch asserted that increasing specialization is supported by the diverse language communities which develop around any field. Different language and communication systems lead to different perspectives and further, a perspective is not the sort of thing that can fuse. It is in these two problems, meaning and perspective, where the gap between scientific assumptions and purposes in the social sciences begins to emerge.

In his role as a sicnetist, the concrete thinking social scientist has identified one of his primary purposes as problem solving. He orders information in order to achieve control over the system. (This is in contrast to the control he achieves in the philosophical sense when he defined the constructs which identify the system.) Since technology provides the tools for this control in science, it is consistent with this purpose that the social scientist designs his system to fit the best available technological tools.

Although concrete systems theorists were at first discouraged by the complexity of the problems to be solved, computer technology has given them the ability to organize and add dynamics to an incredibly complex array of data. Processes can be simulated. Systems change over time in reference to internal feedback and external input. Artificial intelligence is created and construed by some as a representation of life.

Although the structural similarities may be quite adequate for predicting certain types of behavioral events, the philosophical
differences between these computer systems and social scientific subjects are profound. These systems were created and their defining spirit is identifiable. The assumed end point (conceptually if not practically) is contained within a currently programmed formula which suits the purposes of the programmer and which will change only in response to presently defined stimuli. The system is not truly, in the philosophical or teleological sense, open or purposive. The ability to organize complexity does not give the programmer an increased understanding in the definitional sense because he already possesses the constructs according to which he designed the system. No new meaning has been added to the deductively defined judgments which describe the system.

For the abstract thinker in the social sciences, the theoretical purposes of legitimacy and the need for a paradigm are contained in the issue of perspective. A unified perspective is judged to be necessary for a scientific discipline (on the basis of observable and theoretical evidence) and a scientific orientation is judged to be critical for the internal and external evaluation of the social sciences as legitimate. Systems theory offers these benefits provided that one assumes the independence of action and results and the reasonableness of operationally and objectively defining human actions. When applied to the social sciences, these principles are a basis for the conceptual closure which reduces evaluation to dogma. A single perspective or paradigm restricts social scientific investigation rather than encourages normal science because it reduces purposive research to data collection which is focused on a predetermined end point and method to the exclusion of different
historical definitional contexts. The following sections, which reflect the development of systems theory as applied to the social sciences will demonstrate the progressive removal of events from the contexts in which they were originally construed. In the end, even perspective is regarded as an object to be measured and systematized. Non-functional mini-theories are all that remain. And they can only predict increasingly specialized events which are defined in separate language communities. Thus, even the goal of unified social science is unobtainable within this context.

It seems appropriate to begin this investigation into the loss of continuity between assumptions and purposes with the first historian in the field, Von Bertalanffy. Vpn Bertalanffy (1947) used principles borrowed from physical and mathematical systems to theoretically describe biological models. He emphasized the theoretical similarities between the open systems of living organisms and irreversible thermodynamics. He established the tradition of enumerating principles of homology rather than assumptions which are to be directed towards the purposes of the research. These principles then became the focal point of subsequent borrowing in the social science.

Statisticians Lotka and Volterra (1925) used mathematical formulas to model population systems and explain evolutionary trends. In addition to patterns of interactions between populations, they also described formulas for environmental interaction which included such concepts as the carrying capacity of a contained environment and a limits cycle. Garrett Hardin (1963) elaborated upon this analysis to explain the more complex interactions between population and environmental systems which contribute to stability and instability in a
closed world system.

Economist Kenneth Boulding (1962) borrowed from these biological models in a neo-Darwinian perspective on competition. He described arms races in the international political system as reactive processes wherein decisions are based on the acts of others. After defining some absolute patterns by which to measure the response patterns of the competitors, he attached moral judgments to these patterns by externally labeling various patterns of behavior as saint-like, devilish, publican, yogic, etc. Non-linearity could be introduced into this system primarily as a measure of diminishing returns once the competitor has reached an overkill capacity. Non-reactive states could be maintained because of exogenous interactions with parametric systems.

Many interesting observations can follow from historical modeling of competitive political systems. For example, growth rates in particular nation states can be related to attempts at hegemony. Both of Germany's attempts at world dominance occurred at the inflection points of their bell-shaped growth curve. When relative perceived growth rates first began to slow down and when the descent began, wars of conquest were initiated. A comparable situation marked the two French initiated wars of hegemony. The implication that biological patterns may be homologous to patterns in social behavior has led to much speculation about this new form of social Darwinism which was previously rejected on the basis of its theoretical assumptions. Now principles of systems rather than assumptions are under scrutiny and their scientific legitimacy adds credibility to the application.

Boulding (1956), in fact, developed several principles of
structural growth which are borrowed from biological theory. The first is a principle of nucleation which states that growth is initiated by some core item that sets the process in motion. The second is the principle of non-proportional change which states that it is impossible for models of different sizes to possess identical characteristics.

Political theorist David Easton (1965), in his description of political life as an open adaptive system, proposed additional principles which govern the behavior of self-regulating and self-directing systems. In order to limit the tremendous volume of minor influences to the system, Easton limited his attention to the two most important inputs: demand and support. In this decision to partially close the system, Easton made another major theoretical step which has made systems analysis more feasible while at the same time removing it a step further from the original assumptions of open systems. It is the programmer's evaluation of the summary variables which ultimately determines the effects of transmission from the environment to the system.

Other principles which enter into Easton's development of a partially closed system are those of an internal controlling agent and a feedback of information. Both of these structures help account for the change in system structure and output over time. Although only previously determined patterns can change the structure, these additions do attempt to account for modification. However, they are still exempt from any purposive action not predetermined by the programmer.

Mervyn Cadwallader (1959) described the open system in a changing
environment which has the capacity to persist through a change of structure and behavior as an ultrastable system. He identified this ultrastability with the complexity which social scientists have found it necessary to evaluate. Memory is the component of the communication system which makes this ultrastability possible. This concept is one which is understandable even within the context of philosophical investigation. Cadwallader made the next conceptual step in attempting to explain programs which are not contained in memory and whose innovative elements can later be incorporated into the shaping of purposive behavior. He attributed innovation to mistakes, forgetting, and programs for novelty. Mistakes, however, don't fit well with an assumption of scientific lawfulness. And although Cadwallader said that a program can include a rule for forgetting, the elimination of old programs would not create new ones. A program for novelty can be no more than any other program as a product of predetermined value judgments.

These value judgments cannot be assumed away because they are not objectively measurable by any standard external to the observing agent. Recognizing this dilemma, mathematician Zadeh (1973) attempted to work out a solution for conceptual definition which could still be incorporated into a systems theory of information processing. Once again working on the level of principles rather than assumptions, Zadeh stated his "principle of incompatibility: ...as the complexity of a system increases, our ability to make precise and yet significant statements about its behavior diminishes until a threshold is reached beyond which precision and significance (or relevance) become almost mutually exclusive characteristics." From a corollary principle,
"the closer one looks at a real-world problem, the fuzzier it becomes,"
Zadeh drew his key perception: fuzziness. He ordered this fuzzy uni-
verse by providing a set of operations which deal with such non-exact
statements.

Although his perception of the problem is relevant, his solution
does not go far enough back into the scientific assumptions to reach
the question of lawfulness as it relates to the explanation of
fuzzy concepts. He substituted indeterminism for definitional
perception as he described the key elements in human thinking as
labels of fuzzy sets with gradual transition from membership to
nonmembership.

Zadeh used linguistic variables in place of or in addition to
numerical variables, conditional statements to relate variables
and algorithms to characterize complex relations, but he still had not
left the realm of lawfulness. Qualitative reductionism is still
within the methodological framework of science rather than philosophy
and evaluation or individual perspective has not been integrated.

This conceptual move from deterministic science as portrayed in
the biological models to indeterminism as a reflection of the current
state of the physical sciences forms a bridge between the two, almost
separately developing traditions of systems theory within social science.
They find common ground primarily in the mathematical algorithms which
shape their models. Most learning and information processing models
are included in this physical reductionism which deals almost ex-
clusively with molecular rather than molar definitions of units. This
state of the art can be compared most appropriately with classical
physical notions of causality.
Psychologist F. Kenneth Berrien (1968) demonstrated this similarity in his comprehensive theory of general and social systems. A small, representative sample of his theory follows.

**Assumptions**

2.9 All systems are open.
   a. Open systems are those that exchange energies with their surroundings.

2.10 Systems exist within systems.

2.11 Systems which defy current description, or are inconvenient to describe, may be treated as "Black Boxes" without invalidating the analysis of suprasystems in which they are embedded.

2.12 The functions of a system are dependent upon its structure.

2.13 A critical proximity is necessary for components to interact.

**Propositions**

2.14 Initially, systems exhibit greater resistance to destruction than the subsystems or suprasystem which evolve subsequently. Later, the reverse may be true; see proposition 5.3.
   a. Components are both mutually attractive and repellent.

2.15 The state of the system is one determinant of the output.

2.16 Both signal and maintenance inputs are necessary for long-term survival.

2.17 Systems may produce useful or useless outputs as determined by the suprasystem.

2.18 Suprasystems select the outputs of their subsystems which are useful; contrariwise, the suprasystem rejects useless outputs from its own subsystems.

2.19 Surviving systems are those in which useful outputs exceed useless outputs.

2.20 A critical proximity of components brought about by exogenous forces is a necessary but insufficient condition for system operations.

**Growth**

5.1 Growth may be viewed as structural modifications initiated by some "foreign" input permitting the acceptance of maintenance inputs.
   a. Emergent characteristics of systems are the necessary consequences of growth and attendant modifications.
   b. Because growth modifications are such as to permit the system to be maintained more efficiently, they can be viewed as adaptations.
   c. Growth is limited by adaptation limits and memories.
   d. Growth follows a "plan" embedded in substructures of the initial system modified by localized specialization.

5.2 Learning may be viewed as structural modifications (memories) resulting from signal inputs.

5.3 Suprasystems, although evolving out of their subsystems and
hence dependent upon them, gradually gain control over the subsystems. This is the consequence of the necessary specialization of structure and function in subsystems by reason of growth requirements.

5.4 Some conflict is inescapable between the requirements of the suprasystem and the continued identity of the subsystem.

His theory leaves little to the imagination or to chance and covers almost every contingency at one point or another. Whether one views this complexity as a reflection of a complex subject matter or of the need to continually add premises to a set of assumptions which does not quite fulfill the purposes of communication is a matter of original perspective and focus of intention. If the need to order assumes greater priority, then greater molecular complexity is desired regardless of its truth value. If the desire for understanding is stronger, then increasingly limiting behavioral options is frustrating to the purpose. And what is lost in this probabilistic description of molecular action is an understanding of why the individual unit exhibits a particular behavior. Final cause is sacrificed for increasingly accurate descriptions of molecular rather than human (molar) units.

Rashevsky (1968), in fact, suggested that some social phenomena could be handled entirely with the mathematics developed for physical systems without regard to conceptual definitions. In particular, he attempted to describe the mass behavior which constitutes certain historical processes. He used a process of simplification based on statistical frequency to eliminate the need for ideographic complexity.

Rashevsky likened his simplification of these processes to the classical kinetic theory of gasses which assumes molecules to behave as rigid spheres. Although scientists know that molecules (as well
as social systems) are highly complex systems themselves, for purposes of theorizing, studying and describing larger processes, they can be treated as subsystems or units.

Well aware that there is no one correct explanation for a physical or social phenomenon, Rashevsky demonstrated that close approximations, accurate descriptions, and probable predictions can be derived from mathematical models of historical processes. Especially in regards to the order of magnitude of rates of change, the mathematical models are more accurate than mental models which attempt to simulate the same system.

Primarily, Rashevsky described the evolution of human history as a continuous interactive process of influence. Knowledge and civilizations multiplied as a result of the interactions of human and social units in active adaptation to their parametric systems or environment. This view contrasts with the more traditional, linear-analytic view which would view the development of culture as an educational and questioning process of the primary group. In order to describe such interactive, dynamic processes, Rashevsky utilized such variables as the mean free path (the average distance that a group wanders between two encounters), the coefficient of diffusion (the rate at which a randomly moving particle gradually drifts away from its original position) and velocity. The resulting equations reflect a kinetic property of social units. The quantities that result from an application of these equations to actual historical data are very close approximations for pre-literate societies.

This simplistic example demonstrated only the potential of similar quantitative models for theories of history. Rashevsky
also evaluated many more complex systems which focused on the spread of beliefs, prejudices, and information, behavioral influences and changes, transitional periods, rates of cultural development, decay and isolation.

By describing group processes and mass behavior, Rashevsky found it necessary to treat the "great men" of history as leading parts or triggers in a thermodynamic perspective. This evaluation of the leader appears to be common among most systems theorists.

Easton (1965) was one of the few who gave a different interpretation of the controller. Easton viewed the leaders, rather than the individual unit structure, as decision making entities. Rashevsky regarded the leaders more or less as threshold breakers. They are not exceptional individuals but rather the one additional straw which breaks the camel's back. The strong individual appearing at a crucial time can advance or delay the sudden change. He cannot, however, either produce or prevent the change. The appearance of these individuals introduces only a limited indeterminism in relation to the time variable.

However unimportant this influence may be to a mathematical view of history, to the individuals involved, the impact could be quite significant. According to Rashevsky, a thermodynamic historical perspective cannot accurately describe processes at less than the 100-300 year time scale. On this large of a scale, the individual does appear unimportant. But on this scale, prediction is also less valuable.

This time scale restriction may appear to make Rashevsky's method useless for most social scientists and restricted to historians who
view only the rise and fall of civilizations over large spans of time. Rashevsky recognized this limitation and emphasized the fact that this proposal was only a first step which should stimulate other investigations.

This limitation is not the major one, however. Understanding, which Rashevsky claimed as a benefit of his complex ordering, does not result with the addition of a level of abstraction to a system already once removed from real-life observation. Mathematics only adds a level of sophistication to the already dehumanized behavioral assumptions of science. Another more common tool which is used in an attempt to fit the systemic assumptions to the purposes of theorizing about social systems is modeling.

Modeling has always been a sueful conceptual tool for scientists, even when the variables they studied were related in a simple, linear fashion. Given a systems theoretical framework in the social sciences, however, modeling becomes more than convenient - it becomes necessary.

The SIMSOC modelers (1972) gave four major reasons for the appropriateness of modeling as a method for studying the social sciences: a) economy -- a savings of time, money, human and material resources, b) visibility -- internal processes, structure and units are obscured by the environment and time. In order for scientists to see and refer to the same conceptual system, it is necessary that it be removed and simplified, c) safety -- experimental manipulations of real life situations that affect real people are dangerous, unethical and uncontrollable., d) reproduceability -- other scientists can replicate and manipulate exactly the same system only by using a model of the original.
In addition, there are many other methodological and practical benefits which accompany the use of models. In a simpler environment, it is easier to test ideas by the manipulation of discrete variables. Von Bertalanffy's method of homology works well with models of comparison for different types of systems or the same type of system in a different area. Future behavior of the model can be predicted by environmental and internal control. Descriptions can be more concise and less fuzzy or openly fuzzy with specific relationships. Methods of measurement can be refined and tested. New data can be introduced in specified proportions, information controlled, and laws of behavior postulated and tested.

In other words, the model catches theoretical assumptions in a net and attempts to sift this layer of knowledge, by ordering it sufficiently, into the level of purposeful communication. The principles or purposes which form the basis of the model are the pattern of the net. Assumptions are made to fit the purposes rather than forming the framework.

Models can be physical, mathematical, or representational. In systems theory, models must contain three major types of information: 1) the system -- a set of interrelated variables with a common purpose; 2) the structure -- a specification of components and how they interrelate; and, 3) the dynamics -- a description of how components evolve with time.

Over the past 30 years at MIT, systems dynamics have been evolving together with the technology which can be used in computer models. Jay Forrester has been one of the major translators of this language and methodology into the social sciences. The Club of Rome, formed in
1968 to undertake a "Project on the Predicament of Mankind," had reached two dramatic conclusions which made an alliance with Forrester appropriate. First, efforts at individual problem-solving are inappropriate for a world where the number one law of systems is that you can never change just one thing. Secondly, the world policy leaders cannot wait for a perfectly precise and humanitarian systems science; they need a decision making model now to prevent chain reactions caused by unintended changes in the world system. Overcrowding, overpopulation, pollution, nuclear races, pesticides, and other facets of the "World Problematique" demonstrate dangerously exponential patterns of growth as well as deceptive time lags before problems become apparent or treatable. Complex problems cannot wait for understanding. Behavioral problems were, thus, identified and, in their complexity, appeared amenable to Forrester's (1968) type of systems theory.

One of the problems with these predictions of disaster (aside from the obvious lack of effect that long term forecasts had on policy makers) was their discreet, disciplinary nature. Specific attempts at problem solving in any one area would produce unnoticed effects in another area. For example, raising the material standard of living in order to reduce birth rates would also increase industrialization, pollution, and the use of natural resources.

Non-behavioral perceptions are also interactive with the system. The rising expectations of the educated (associated with material standard of living) increase alienation and frustration, especially when these expectations cannot be met within the context of limited growth. The political implications of forceable systems alterations (e.g. mass sterilizations) have still not been successfully incorporated
into Forrester's (1972) model because of the inherent unsuitability of empirical measurements for value judgments. Nevertheless, as long as Forrester models behaviors and materials, the system functions according to scientific assumptions.

The gap between predictions and assumptions begins to appear with Forrester's basic, systemic political assumption. He assumed that people generally have an idea of how the system works, especially in regards to the simple, linear reactions. Problems arise when they fail to consider the effects of interactions, when they work from different models with different implications, or when they have different values and goals which they try to achieve. Even if the first two problems could be solved with the universal acceptance of a "true" model, the final difference could not be settled within the scope of a behavioral, empirical model.

For example, Forrester, in his urban model (1969), proposed slum removal and the creation of industrial parks within the city as the solution for revitalizing the economy and alleviating the urban crisis. Some critics of Forrester's model emphasized these particular solutions as the non-humanitarian, weak points in his conceptual system. They fault Forrester with the same errors in systems judgment that current policy makers make when viewing subsystems as closed.

In regards to the world model, where the closed system approach is not so much debated, critics rely more heavily on contradicting assumptions concerning exponential growth and limits to growth. Recently, even the Club of Rome has begun to stress the concept of selective growth rather than the immediate and inhumane stoppage that Forrester's model would appear to promote.
The philosophers and humanitarians who attack Forrester on this level miss the logical gap in his final underlying political assumption. Forrester is assuming that individuals, like systems, can have programmed optimization goals and that these goals can be made uniform across systems. This assumption leads him to conclude that an awareness of information about interaction will lead to unified, purposeful action. More information, however, does not really address a problem which involves value judgments, such as whether to live at a lower standard of material existence with more children or whether to see concrete and be able to drive to more shopping centers. Skinner's answer to this would perhaps be the benevolent dictator who is the only one concerned with what is best. Even Plato in the Republic stated that the benevolent monarch was the "safest" type of government, even though philosopher kings would be the best.

The systems modelers, rather than question the underlying assumptions that human judgments are measureable, attempt to match operational definitions even more closely to perceived behaviors. They recognize this same principle in the modeling of empirical data: the closeness of fit between a particular program and the process it simulates is generally determined by the perceptions of the modeler. Therefore, even social systems can be structured according to accurate perceptions of behavioral events or activities.

In one such instance, when measurements of national power were to be used for conflict models in peace research, a definition of national power could not be agreed upon. Varied samples of individuals did attribute the characteristic to the same nations in the same proportions, however, so a behavioral agreement was used rather than
a clearly defined measure. And material standard of living, a vague phenomenon with far reaching implications is defined by Forrester as a ratio between two other measurable quantities.

At first glance, these would appear to be reasonable, functional approaches to the definition of otherwise unmeasurable qualities. However, it would also appear reasonable to question further the use of definitions which were designed to fit a model already conceptualized. Inferences of the observer would appear to be even more probably biased when an entire system rather than a mere hypothesis is under investigation.

The philosophers of social science develop at great length the argument that this type of "objective" or operational definition is inherently unsuitable in a social science based on inductive construct formation.

We are all either beneficiaries or victims of philosophers long dead.

Bertrand Russell

Just as general systems theory is but one of the methods used for theorizing in the sciences, albeit an extremely popular one at the moment, a subjectively intended understanding is only one method of inquiry in philosophy. However, since these two methods are the ones chosen for comparison in this dissertation, the review of science and philosophy will be limited to a one-sided inter rather than intra disciplinary contrast in viewpoints.

All of the philosophers reviewed in this section support or at
least contribute to the position that knowledge in the social sciences is inherently different from that in the sciences. They contend that a separate philosophy for the social sciences must be developed and include a proper perspective on methodology.

The organization of this section will primarily be by author rather than by subject matter, since there is a great deal of overlap in this recent and still somewhat diffuse perspective. A pattern of development which may facilitate comprehension of at least the four major philosophers would be to identify the substance of the argument in Winch (social sciences are inherently judgmental and must therefore be distinguished from the natural sciences), the essence of the position in Louch (perspective is an inherently moral occupation), a method for investigating in Von Wright (historical understanding within a context rather than objective scientific explanation) and a specific application of the emergent philosophy by Gallie (history as a social science with a perspective).

Originally, perhaps still, everything could be said in a picture: the ultimate philosophical cartoon on the wall of the cave expressed the all-encompassing source and subject of wisdom. By the time the ancient philosophers wrote, the knowledge system had expanded, both in areas of concern and of method to the point where issues of absolute and relative properties (for example) were integrated into the science of religion as well as political, moral and economic concerns. The Renaissance man was the last who could encompass the whole system at its exciting and critical period before the true exponential nature of growth overwhelmed any mere mortal or group of mortals who attempted to understand and thereby control its explosion.
And so the exponential rise of specialization began in inter-
action with the growth of "knowledge." Disciplines multiplied as
language communities each attempted to integrate and propagate
a portion of the increase in content.

In the sciences, it has been proposed that the nature of the
expansion has been punctuated by revolutionary phases which periodi-
cally reunify scientists under a new and initially rejuvenating
paradigm. In the arts, perspective is viewed as random or cyclical.
There is no perceived accumulation in "knowledge" but rather an
accumulation in expression.

This section of the dissertation will offer support for the
position that in the social sciences, perspective is not cumulative,
although content may be. Perspective on human action is inherently
judgmental and dialectical. And the greater the increase in content,
the more apparent this non-exponential change in perspective
becomes in contrast.

Personality theory represents one of the small but not miniature
levels of information accumulation in the social sciences. Its
nature is inherently judgmental because it is based on concepts and
abstractions which are constructs of human evaluation and organization.
As an area of specialization, personality theory has roots in the
epistemology of philosophy and the metaphysics of science. More
directly, it can be traced from the dialectically opposed offshoots
of philosophy: science and religion. More recently, the branches
of psychiatry and psychology have entwined. Which stemmed from
the art and which from the science is difficult if not impossible
to determine.
Even as orientations emlited into personality theory from both sides, the content accumulates internally. Around the turn of the century, there was enough accumulation to recognize that personality theory had become a specialty by virtue of the quantity it shared as a companion in the exponential growth of knowledge. Some mistook this accumulation of content in the specialties for multitudes of new perspectives.

Kuhn (1970) labeled the social sciences pre-paradigmatic because of the seemingly innumerable viewpoints which were accepted as valid by some significant group. The position of the philosophers of social science reviewed here, however, is that the social sciences are aparadigmatic -- inherently judgmental and subject to dialectic fluctuations rather than revolutions.

Although absolute categories are hard to determine, personality theory will function as a social science for the purposes of this dissertation. And just as personality theory is caught between the dialectic forces of science and philosophy, so, too, are the social sciences of which it is a subset.

Peter Winch (1967) described this relationship in an overview of philosophy in the social sciences. According to Winch, social scientists in general confuse conceptual (or philosophical) issues with experiential (or scientific) ones. Since humans are also physical entities, they display physiological or "non-conceptual" behaviors which can be explained within a scientific framework. Social science, in the true definition of social, however, is based on interpersonal conceptualization.
Concepts determine the form of experience in the social sciences, according to Winch. And, as a corollary, the perspective or philosophical orientation, must shape the field of observation for the social scientist as it conceptually determines what can be demonstrated.

By temporal and spatial definition, no two observers can ever see precisely the same thing, even in the natural sciences. In the social sciences, this definitional rule becomes compounded by including the individuality of the observer. This means that no two observers can conceptualize the same thing. There is no external standard based on non-conceptual measures. Operational definitions provide merely a predetermined perspective which is imposed on the observer. Thus, not only explanation, but also conceptual understanding is precluded if undertaken solely within the observer's perspective.

However, since humans are not billiard balls and their actions are not based solely on mechanistic "push" by an external agent, the subject provides another possible conceptual reference point. The subject's "intention" or conceptual directionality provides a basis for the study of human action as meaningful behavior.

The historical roots of this perspective can be traced to Weber (1922), who identified the primary content of the social sciences as meaningful behavior. Meaningfulness can be assessed by using a particular perspective to determine the role of the behavior in a larger form of life. And the only perspective under which "meaningfulness" could exist would be that of the agent. It is not necessary that the agent be conscious of an intention, but "explanations ... must be in terms of concepts which are familiar to the
agent as well as to the observer." The agent, therefore, must be capable of understanding (although possibly not accepting) an explanation of his action. And the observer, by "stepping inside" the agent's conceptual world, will also be able to understand how the action could have been meaningfully conceptualized.

Problems are inherent to this idea of a social science just as they are to any agent-observer study. And just as systems can be simplified in the sciences by using laws, in the social sciences, rules can perform a similar limiting function. Because the perspective of the social sciences must be one of conceptual definition of meaningful actions directed toward understanding rather than the causal definition of Hume's "constantly conjoined" behavior directed towards explanation, the search for and accumulation of knowledge will not be in the realm of natural laws, but in the context of rules.

Rules order information in a definitional rather than in a causal relationship. In addition, rules are intelligible only in the context of the particular way of life which formed those definitions. The rules of logic are one example of such rules. And science and religion are examples of differing modes of social life. Each has a criteria of intelligibility peculiar to itself. So within, but not between, science and religion, actions can be logical or illogical. Logical understanding (or any form of understanding) must be based on an inherently variable referential theory of meaning.

Understanding, therefore, can be based on deduction if the context rather than the system is used as a reference point. Language communities (or specialties) can become functionally autonomous
when their necessary referents are included within a sublanguage. In theory, however, the historical roots (not causes) of the language are ultimately traceable.

In the historical sense, empirical evidence can be used to support social scientific developments. Subjectively perceived causes for behavior are real in their impact and can therefore be identified, though not understood, empirically. For example, the accumulation of information can be measured and assessed through the convention of perspective.

In this way, history, too, can be included in the social studies, not merely through the interpretation of individuals and identification of events, but through a historian/reader perspective. J.S. Mill (1843) had earlier discussed historical trends as similar to scientific laws. Popper (1957) limited this concept only by saying that the trend must initially refer to a beginning state. The quantitative historians with their predictive models apply this philosophy. However, Winch contended that social science is a conceptual undertaking. It is impossible to explain and therefore predict social developments.

Instead, Winch supported the idea that "a way of thinking and the historical situation to which it belongs form one indivisible whole." He acknowledged that Collingwood's (1946) view (the historian should think the very same thoughts just as they were through) is better than empirical methods for understanding history. However, Winch maintained that a better perspective is the tracing of internal relations rather than ideas. It is the rules establishing connections which form the bond between the history and the student.
One does not have to know the theory in order to appreciate the connection between the steps of the argument; on the contrary it is only so far as one can already grasp logical connections between particular statements in particular languages that one is even in a position to understand what the logical theory is all about.

Therefore, the historian and his students reach a state of conceptual understanding through a mutual grasp of the relations or rules which existed. The internal relation or rule is an essential property for conceptual theory. Since any social science has this same type of conceptual base, its parts must be connected by rules rather than by mathematics or laws.

Winch demonstrated that an identification or perception of context or perspective is necessary in order to define these relationships. Since truth is an irrelevant concept for the understanding of human understanding, justification is the real issue or core problem for social science. Justification for perspective on relationships remains a philosophically based study, bringing social science closer in its fundamentals to philosophy with only methodological similarities to science.

The concept of a rule permits the observer to evaluate behavior. In other words, the correct behavior has been established by the rules and variations are recognizable by an observer. It is only in this agent/observer sense that rules can be consistently evaluated. "Establishing a standard is not an activity which it makes sense to ascribe to any individual in complete isolation from other individuals"

This does not mean that there cannot be "private" rules. The only qualification is that an observer must, in principle, be able
to understand the rule and judge when it is being correctly applied. In addition, the agent would only be able to establish a personal standard if he had been exposed to society, and its established rules.

To circle back into the nature of language, Winch demonstrated that concepts are necessary for the understanding of rules and therefore meaningful concepts and rules are logically dependent for their sense on the social interaction between men rather than on independent "givens" of a language system.

The social sciences are therefore inherently subjective, relative, variable, and judgmental. The only way to gain understanding of a social science is to approach a "social event" from a recognized internal perspective because "it is only by reference to the criteria governing that system of ideas or mode of life that they (social things) have any existence as intellectual or social events. (Because) "the relation between idea and context is an internal one (the social scientist cannot) arbitrarily ... impose his own standards from without. In so far as he does so, the events he is studying lose altogether their character as social events."

Thus, according to Winch, not only logic (rules) but also the form of logic is dependent upon the "form of life" being experienced. Experience is inherently relative because there is no super "way of life" from which to extract a set of rules.

In tracing dialectic and demonstrative reasoning back through its philosophical origins, Rychlak (1968) set the beginnings of this belief in a "super way of life" to St. Augustine. From the
perspective of a monistic religion, Augustine did not acknowledge the inherent relativity of values. In his view, man merely observes the valid logical reasoning given by God.

St. Thomas Aquinas salvaged the dialectic of Socrates and Plato by proposing that, although there were not two spheres of reality, there were two sources of knowledge: the intellect and the senses. Each has a role to play, although he felt that science was more perfect. He based this judgment on a definition of the less perfect as that which was not in ascendance.

With this moral justification for reduction to one perspective, empiricism and demonstrative reasoning remained the preferred philosophical orientation of the Western elite through the industrial revolution and the intellectualization of America, according to Rychlak.

He believed that Hegel, "with the possible exception of Plato, ... did more to elevate the dialectic as method and as metaconstruct in the history of thought than any other philosopher." Hegel proposed a monistic idealism with a dialectical methodology. Instead of beginning at the lower levels of existence with indivisible units of meaning taken from empirical reality (Locke), Hegel began "halfway up the ladder of abstraction. He analyzed as well as synthesized with a dialectical tripod structure. Through the deduction and induction on contradictions and resolutions logically or relationally internal to systems of knowledge, Hegel was able to move continuously. He moved through time with a "very fluid, organismic concept of knowledge."

Because his picture of the universal analysis was a time-depen-
dent process, Hegel could apply it to history. History, as the unfol-
ding of a "divine intellect" was homologous to the dialectic activity
of the intellectual mind, moving in logic from premises to conclusion.
This process is a "dialectical drama" as "one civilization passes into
another by the fact that it contains within itself the seeds of
its own contradiction, hence destruction."

Marx almost totally destroyed the purity of Hegel's dialectic
imagery by his popularization of the term dialectic materialism. For
Marx, ideas were "the result and not the cause of material reality."
The now common association of the dialectical method with a mater-
ialistic perspective has given a communistic (i.e. immoral) connotation
to dialectics in the public mind.

A.R. Louch (1966) tried to outline a procedure for integrating
and identifying the moral or connotative aspects of social science.
According to Louch, description is not a method as it is in the sci-
ences. Instead, description in the social sciences is the same as
theorizing. The social scientists oft maligned tendency towards
tautology is the outcome of the attempt to discover true general
laws to put content into experience. The result is platitudes.

This can be avoided if it is accepted that human actions are not
reducible to something else. They cannot be solely the movement of
units or behaviors interpreted with another purportedly objective
framework. Human actions must be given the right to exist within
their own subjective conceptual framework in order for perspective to
remain part of this system which can not be empirically defined.

Louch selectively ridiculed various mathematical formulas
proposed by sociologists and psychologists. The basic mathematical
formula, reduced to its simplest form, of almost every theory examined, is \( (S)(P) = (R) \). With the functions generally remaining uninterpreted and values unassigned, the formula means that the action or response is equal to an interactive process between the person and his situation. No amount of analysis which exaggerates the size of this formula changes the fact that it is common knowledge written in words that the common man may not understand. The basic format is a model rather than a theory, and therefore, it explains nothing that was not already known. An example was found in Lewin's topological and vectorial representations which are not theories but models based on homologous scientific theories.

The result is an overemphasis on scientific terminology and a reductionism which is inappropriate for human action. Louch found that nomothetic, probabilistic and idiographic "theories" in social science are all designed to appear "law-like." For idiographic theories, this effect is sometimes disguised by making the law and the consequence specific to a single unit-event. Although the intent is to make the theory more humanistic by making it individual, the result is still a mechanistic model.

The two major parts of the behavioral models are hypothetical constructs and intervening variables. Louch found the descriptions hypothetical and intervening redundant and therefore, referred only to constructs and variables. He had no quarrel with the use of variables. He regarded them simply as "mathematical facilitations of inferences, especially predictions, without ontological implications. ...It has no empirical or theoretical meaning in itself....Nothing beyond pragmatic advantage hinges on the employment of such
techniques."

Constructs, however, (e.g. drive, motive, deprivation, reinforcement) are both ad hoc (and therefore possibly sufficient but not scientific) and tautological. Thus, the behaviorist's definition of reinforcement as that which increases the probability of a behavior does nothing more constructive than close a circle or system. It is not real and cannot even be examined relatively because it is self-explanatory and only self-explaining.

Pure behaviorism, which reduces all behavior to molecular or biological units, Louch regarded as physiological rather than social scientific theory. (e.g. measurement of GSR takes on a meaning only when it is labeled with a construct) Its usefulness and heuristic intent are largely lost on the social scientist. He used Hebb's illustration as an adequate interpretation of the situation. "Interpreting or predicting gross and particular behavior by means of neural processes would be like interpreting, describing, and predicting a storm through a description of individual raindrops."

Louch also concluded that is is presumptuous to suppose that molar concepts of action are merely accumulations of molecular concepts of muscular movement. The molecular units do not necessarily add up to the molar unit of interest: the human action.

The Skinnerian's use of the laboratory to "prove" that the units differ only in size merely shows that certain physiological responses can be controlled. According to Louch, they never can be explanations of human action because of the inherent difference in observations of actions labeled by different human observers. Only a totally controlled environment with one observer can produce the
results sought by the Skinnerian. When different observers try to communicate the ordered laws that they observe they must use language and the result is either morally laden definitions or more platitudes.

The connotations carried by words make it necessary to examine language, concepts, and judgments. It is in this sense that Louch referred to social science as a moral occupation. "... when we offer explanations of human behavior, we are seeing that behavior as justified by the circumstances in which it occurs. Explanation of human action is moral explanation."

He saw his approach as having three major purposes for the philosophy of social science. First, it clarifies the role of generalizations by showing their basis in rules and aims as they bear on action. Secondly, it reinforces the position that "what we observe depends as much on language as upon eyes, on techniques as much as on events....To identify a piece of behavior as an action is already to describe experience by means of moral concepts."

Third, it demonstrates that even views on subjective topics must be studied within a context.

It looks as if we are obliged to say that, in admitting events, we admit a world joined by causal connections. But the case of images may serve as a reminder here. They qualify as events but inasmuch as they are human doings, intended as opposed to observed, they enter into relations with other items in the network of reasons and not that of causes. Or, if you like, we could admit them as causes in the sense that, unless a person thought them he would not have acted the way he did. But this should not require us to picture these causal relations on the interaction or regularity models. The temporal order is present, but the manner of joining these links in the chain is logical; it consists in seeing the image or the thought as the grounds for acting. The same, I have urged, is the case with the relation of pain and other feelings to
the kind of behavior that ensues. Beyond that, we must construe physical cause as going on in an uninterrupted fashion from physical event to physical event. The fatal mistake lies in supposing that the mental occurrence is a link that fills a gap in a physical chain, not that it can form links with physical events.

Louch qualified his stance by restricting the all inclusive use of a scientific framework:

...enrolling mental events in our ontology is not going to force us to replace logical or moral explanations of human action with a scientific psychology in which the mental occurrences are treated as constructs to be defined and refined by precise measurements of behaviour. Status as events does not entail the kind of explanation to which the psychologist subscribes. Moreover, it is at least reasonably clear that the items which he wishes to bring into the ontological club -- motives and drives, perhaps intentions and purposes -- cannot be construed as events at all. They enter the language as means of isolating and describing actions in virtue of the conventions and rules that govern human life.

The rules which were central to Winch's conception of the subject matter of social science were treated differently by Louch. Rules for the game of life are metaphorical according to Louch rather than homologous. Therefore, they are inherently somewhat limiting and deceptive.

Louch concentrated his discussion of game theory not on the mathematician/economist's tool (which presupposes uniformly rational behavior and a standard motivation) but on the more commonly employed social scientist's analogy of the chessboard where

To explain human behavior is to show that it follows from rules, positions of the pieces, and strategies of other players... Thus the ability to describe an action entails an explanation of it, for the appeal to the game, which provides identification of what is to be described, is also the nature of our account of the action. What it is and why it is coincide.... the explanation of moves in a game is not the
object of an inquiry separable from a description of the moves. ... What remains to be explained and what most generally requires explanation is the departure from rule and paradigm performance, directing inquiry away from the game. According to Louch, game-playing provides a metaphorical basis for explanation in the social sciences by allowing the use of generalizations which can lead to systematization. What the social scientists who use this metaphor neglect to consider, however, is the fact that its effective use is context bound. "Methodological immunity is bought at the price of significance." The external observer cannot, by definition, have the perspective of a participant. He can know the rules but still not the reasons for following them, deviating from them, or changing them. Basically, Louch saw the metaphor as constituting another "generalization of method." Neither models nor metaphors are theory.

In returning to the concept of explanation as a basis for study in the social sciences, Louch referred to Wittgenstein's definition of explanation as a "family of cases, joined together only by a common aim, to make something plain or clear." This means that the needs of the audience must be referred to as well as the characteristics of the subject. Heterogeneous explanation is therefore inherent to social science as agents, observers and interactions are varied. According to Louch, this view would lead to sterile research which was irrelevant to actual human performance. The solution lies in the observation of "moral facts." Only when morals and facts are perceived as inconsistent terms can explanation of human action in terms of justification be rejected.

As for a "scientific" method which would handle these social
phenomena, Louch proposed: "The first step to an analysis of moral argument, like the first step to an investigation of human action, is to inquire what sort of thing men are doing." This study must be undertaken in its context. The expectation of a unidirectional paradigmatic revolution is based on "conceptual confusion and bad metaphysics." There are no "discrete spatio-temporal events_ to be examined in human action. There are a past, present, and future which conform to natural time rather than a system time. And unlike the physical systems where definitions retain their identity over time and space, Louch points out that the social space is not an isolated lab or a closed philosophical system and the time is not isolated from past and future justification. Moral explanation, therefore, must be the goal of the social sciences. Theory in the social sciences should not be analogous to either philosophical rules or scientific causal models.

Terence Ball (1975) rejected the common assumption that causal models are recent additions to knowledge borrowed strictly from modern science. The modelling of asymmetrical relations is not new nor is it a development of the scientific method. "Philosophers' metaphors may, in time, become behavioral scientists' models." The danger lies not principally in being ignorant of the model's history, but in disregarding the philosophical requirements for consequences given such lines of thought. For example, "Power-explanations are not causal explanations in the contingent Humean sense, because they are warrented by rules rather than by general laws... (and)... thought-models are not logically necessary."

The model in general use, however, is a causal model of units and
their movement, structure and function. George Henrik von Wright attempted to develop a method for social science which can be favorably compared to that philosophical-scientific framework.

According to von Wright, any law-like explanation is based on a causal perspective. The modern notion of function has explicative force only when the laws involved have nonlogical nomic connections. Therefore, explanation conforming to a converying law model and causal explanation are, substantially the same thing. Laws are explained by being subsumed under more general laws and deduced nomologically. Therefore, it is facts which really require explanation. And it is in causal explanation of all types that the problem lies.

According to von Wright, "Perhaps all causal relations are factual. But quite certainly not all factual relations are causal."

The primary problem of causal relations is the regularity of the time sequence. The inductive generalization, based on past experience, that the regularity will continue, is perhaps applicable to mechanical systems but not to human relations.

One of the disturbing implications of systems theory for von Wright is the fact that systems must be temporally closed. They must be put into motion from a beginning equilibrium state.

Initially, causes of this disturbance were described as operating agents and visualized by the vitalists as invisible "powers." In science, these "superstitions" have largely been eliminated by recourse to cybernetic explanations. But the fact that science has been able to rid itself of animism does not eliminate the conceptual conjunction of cause and action.
As a possible solution, von Wright proposed that the concepts be divorced in human action by separating the notions of doing things and bringing about things. Bringing about things is a behavioral movement with a result which brings about consequences. Doing things is the result of an action. The thing brought about is a consequence of the action. Consequences of actions are generally changes (events) which are identified either with the process of change or with its end state.

According to von Wright,

...the connection between an action and its result is intrinsic, logical and not causal (extrinsic). If the result does not materialize, the action simply has not been performed. The result is an essential "part" of the action. It is a bad mistake to think of the act(ion) itself as a cause of the result.

Acts are the ultimate results of conceptual decision. Men can also be made to act, but this involves a change in their decision through a "motivational mechanism, and as such, not causal but teleological."

According to von Wright, the claim that there is a closed system with an initial state can only be demonstrated if there is an outside agent who can manipulate it (through scientific experimentation) and be sure that his manipulation is the cause of the change in states. The scientist, therefore, cannot be a Humean passive observer. He must tamper with the situation in order to demonstrate that a real causal law is in effect rather than a factual condition.

Although this type of experimentation may be appropriate for scientific investigation, it is impossible for investigation in the
social sciences. When the social scientist tampers with people, he has changed not just the situation but also the internal workings of the object under question as well as the interpretive dimension of the question. Logical necessities (based on essential properties) rather than nomic connections are the primary relations to be studied in the social sciences.

In order to distinguish the scientific method of explanation from the appropriate form of description for the social sciences, von Wright used the term understanding to express the initial requirement of purposeful investigation in the social sciences. He stated that scientific explanations can have the form of purposive theories, but they still cite nomic or causal connections even when discussing "adaptive" systems. He referred to such systems as quasi-teleological. Intention is reserved for the social sciences where ordered systems need to be genuine teleological aims at understanding based on symmetric relations rather than asymmetric causal ties.

The investigation of these connections includes the observation of the existence of factual behavior and the application of an intentionalistic "interpretation" which is logically deduced from the behavior. Understanding action presupposes an interpersonal establishment of meaning.

Behavior gets its intentional character from being seen by the agent himself or by an outside observer in a wider perspective, from being set in a context of aims and cognition. This is what happens when we construe a practical inference to match it, as premises match a given conclusion. 34

Once understanding is attained, von Wright believes that explanation can have a secondary role in history and the social
sciences. This comes only at the end (not the beginning) of a rather lengthy process. Facts are interpreted as they are observed. Then,

With every new act of interpretation, the facts at hand are colligated under a new concept. The facts, as it were, take on a "quality" which they did not possess before. This conceptual process is, I think, related to that which in hegelian and marxist philosophy is called the transmutation of "quantity into quality," and also to various ideas which philosophers have entertained about "emergence" ("emergent qualities.")

Von Wright also discussed the systematic notion of feedback as it realtes to societies. He regarded the process of informed change in the human social systems as "motivational necessitation through practical inferences" rather than "human causation under covering laws." Therefore, the primary process is teleological description and its goal is an understanding of what something means or signifies.

Human actions are logically necessary when the premises are formed and it is only by cognitively changing the premises (and therefore deductively giving the system new goals) that the process can be altered. This is not in keeping with the mechanistic system, which, once set in motion does not change its functions.

Thus, feedback from the populace to the leaders does not adequately explain the cognitive process which would be involved in the decision to alter a course slightly to arrive at a slightly altered end point. Systems models can never be adequate for this type of explanation because of their lock-step nature, limited program and input, and preprogrammed purpose.

And simple feedback will never be an adequate procedure for
modeling history if understanding rather than explanation is indicated. Although von Wright had allowed for explanation as a secondary approach, W.B. Gallie (1968) found the two perspectives to be inherently and dialectically opposed.

Gallie believed that the way to understand history is the same as the way to understand all purposive thought and action and unlike the way we explain natural phenomena. In a definitional sense, when one understands what happened in history, one also understands why it happened. This is similar to the major position assumed by Winch, Louch, and von Wright.

Gallie used the concept of a story as the framework for describing history rather than the concept of a theory as it is used to describe physical occurrences. For Gallie, the essence of a story is not the listing of the routine events, but the elements of surprise. It draws attention to unique rather than predictable "known" events.

Unique events require that the historian follow them according to their internal purpose and value constructs. An additional complication is the fact that they must be interpreted from their overt manifestations. The empirical and the conceptual are not clearly distinguishable items; throughout history they overlap and reinforce one another. It is in tracing these relations that philosophers can contribute to historical understanding.

There are two reasons why the criteria for philosophical concepts continually remain in dispute. First, the interpretation of philosophical concepts has an effect on human life and therefore other philosophical concepts. This produces constantly changing
concepts. Second, philosophical concepts are complex and unstable.

It is through a model of essentially contested concepts that Gallie interpreted historical understanding. But, he asserted, "in order to fulfill the function that I ascribe to essential contestedness, a concept must be understood historically, as a phase in an inherited and unending intellectual task."

In this context, he proposed that this insistence upon historical perspective need not involve relativism. Essentially contested concepts contain their own arguments and through a historical interpretation, these arguments can be developed and compared with themselves at other points in time.

Gallie made several points in his critical philosophy of history which have a direct bearing on the perspective of this dissertation as it pertains to historical understanding of the philosophical orientations in personality theory.

He reviewed Rickert's (1894) philosophical interpretation, that, unlike the scientist who observes data relevant to the problem because he attempts to obtain a universal relation, the historian selects data on the basis of a personal value assessment of what he considers significant to the understanding of the event, no matter how particular the item might be to the situation.

Although Rickert was unable to justify his claim, Gallie believed this to be a central issue developed throughout the philosophy of history. Collingwood's (1946) modification was that the historian must use real thinking, which is definitionally problem-solving. In this context, history must be the rethinking of once real problems. Not only is this approach intuitionistic, which is not
necessarily bad, but it is generally once or twice removed since the
historian must depend on the narrative of other historians.

Gallie also rejected the method of analogy, whether it be to
the methods of science or philosophy. He does appear interested in
Popper's (1961) suggested "situational logic" which sound similar to
the rules within their own context supported by Winch.

Gallie's primary support, however, was reserved for the form of
a historical narrative. The subject matter may be recognizable,
but the relations are adjusted by the perspective of the historian.

To approach it is rather like looking for one's bearings
in a fairly familiar country, but from a new viewpoint from
which many well-known features reappear, but in new relations,
as if in the wrong order, certainly not according to the book.
This difficulty is a result of that bias in our philosophical
tradition, from Plato to the present day, in favour of the-
oretical knowledge, i.e. knowledge admitting of universal
statements and of being set out in systematic form ....

Having stressed ... the paramount importance to history of
events of peculiar human interest, and more particularly of
contingent, essentially unforeseeable events ... I must now
enter a caveat, in case this emphasis should be misunderstood.
I am not claiming that historians either do or should exert
themselves particularly to emphasise, in the course of their
narratives, the presence of the sorts of features that I have
just mentioned. ... we should not expect historical writings to
be particularly effective in making us realise, or in making
real to us, the contingent character of the main events with
which they are concerned. The basic and constant aim of the
historian is to present an acceptable because evidenced and
unified, narrative: chance developments, creative developments,
routine developments, necessary or foreseeable developments must
alike be woven into the whole design. ...

Jacques Barzun (1974) also has evaluated the concept of story-
telling as an adequate communication medium for history. He
contended that numbers may be sufficient information for drawing a
graph, but in the absence of perspective and the identification of
relationships, there can be no understanding of a spatial/temporal
system of dynamic change. And in contrast to the graph, which by its open-ended presentation tempts one to predict, the tracing of relations and their interactions with context leads to social scientific theorizing based on understanding. To repeat the conviction in a more specific reference, multivariate analysis of data (which in this focus on personality theory could consist of great men, schools, technology, employment, etc.) in the absence of either relations or perspectives, may provide the basis for research but cannot provide the basis for understanding.

It is only in the context of historical understanding that communication can take place. And communication, whether with oneself at a later point in time, or with others, is the way to reinsert fuel for the dialectic into the system so that different (and perhaps more adaptive) theories can be developed. Technology, or the application of theory can provide empirical feedback into a theory, but it could never, on its own, provide the information necessary for changing the perspective of a theory. In the sciences, even, it is not simply the fact that theories don't work empirically that leads to revolution and a new paradigm. There must also be new ideas. And generally, those new ideas are inspired by communication. When there is little communication, perspectives tend to stagnate. And communication is not merely the transmission of information. It implies a learning process by which one can question, interact, and be exposed to more than one view.

In the social sciences, communication is even more important because it is largely through experiential judgments of value that it is decided that a theory no longer works adequately. And it is
in the context of shifting value judgments that theorizing is more likely to occur. Introspective and extraspective communication can thus inspire communication on any level.

The level of concern in this study is that of historical understanding. Barzun (1974) reported that this level is one which is currently undergoing a crisis in perspective. Under the pressures of instant communicability and ordering (and under the delusion that explanation is possible in the social sciences if only the philosophical demon of understanding can be exorcized) "theory" in contemporary history is being reduced to a multivariate analysis of data. Incidents of violence in 18th century France are not understood within a subjective perspective. Instead they are measured in a pseudo-demonstrative abstraction -- the incidence of violence -- and ordered by comparison with the graphs of 17th century and 19th century France or 18th century England as parameters. The aim is to integrate explanation and analysis with abstract personifications (entertaining psycho-biographies or stereotypes such as the slave-owner, the serf, etc) and call the effect interaction.

From the standpoint of theory, the absurdities of this approach are evident. History cannot be an inventory any more than personality can. In order to count and measure, one has to have units. These units are concepts; removed from temporal or spatial perspective they become nonsensical. And measured without acknowledging the new perspective, they become facts which occur for the benefit of the thesis.

Only when two things are logically independent can one be the cause of the other. In the social sciences, this can never be true
and therefore, explanation, whether of history or personality, is an inappropriate substitute for theory. Historical understanding cannot be the search for generalization or general laws. There may be similarities from which one can narrow categories for non-theoretical purposes, but justification or intention must be interpreted subjectively and contextually.

The continual confusion in this area also exists for the historian of science, social science or philosophy. He treats ideas as data to be counted without contextual clues. The cognitive basis for this data cannot be extrapolated when perspective has not been included in the original design just as complexes cannot be counted by an objective psychologist and the personality then analyzed. Historical action (or human action) cannot be abstracted from its context. The story must be complete with an author, and a perspective, in order to be understood. Just recounting the number of events cannot communicate even the barest understanding of why or in what context these occurrences took place.

In an application of this philosophical view, Kenneth Gergen (1973) analyzed the theoretical content of social psychology over time. He concluded that, although the methods used by social psychologists are scientific in character, theories and the perspectives which shape theories are primarily reflections of contemporary history. Theoretical behavior, therefore, can be regarded as a historical action which must be understood in a context. The psychological research which accompanies particular theories must be evaluated as it specifically relates to the historical context because changes in research are dependent upon dispositions as well as the feedback of experimental
results. These dispositions are culturally acquired and change over time.

Sociologist Robert W. Friedrichs (1970) attempted to integrate the concept of a historical perspective with the more abstract notion of a theoretical dialectic. He recorded his history of philosophy in the social sciences from the perspective of promoting a dialogic theory of knowledge for social science.

He agreed with Winch (1967) that judgments are the basis of the essential choices in the social sciences. Weber's value free stamp was given to the social sciences in an attempt to affect a compromise between science and religion. With it one could integrate systems analysis with a "priestly mode" of authority and go beyond relativistic epistemology. Although this unified approach may have salvaged the independence of social science, it did so at the expense of accuracy and relevance. The terms used to describe a social science have inherent value biases which must be acknowledged.

In reference to sociology, Kasper Naegle (1961) expressed a dialectic defineability: "discovery and presupposition go hand in hand. One must create some sociology before one can know what it is; and one must know, at least, what it might be, before one can help create it."

In tracing the historical basis for the theory, Friedrichs found that Hegel's formulation of a thesis-antithesis-synthesis appears to be the natural logic (or set of rules) for the social sciences. G.H. Mead (1929) also supported the contention that social processes cannot be reduced to causes. Mead argued that "there was in the effect an 'emergent' that in turn would condition the context
such that the so-called 'effect' was incapable of being deduced from the so-called 'cause.'"

Friedrichs reviewed the probability that the social scientists' perception of order feeds back into his world and therefore alters the perception. He compared this situation to the proverb of Jonah. Jonah fancied himself an omniscient prophet. He prophesied that God would destroy Nineval for multiple transgressions. The people of Nineval heeded the prophecy and reformed. They asked forgiveness and were saved. The prophecy then turned out to be false and Jonah could no longer visualize himself as omniscient.

It is only in terms of a dialectic that this feedback is regarded as the natural process of social science. In addition, a dialectic philosophy can link freedom with the perception of order. Change is the order and it follows only the rules of the dialectic.

Through the sociologists capacity to grasp the fact that social research actually stands within the dialectic that is social interaction, he stands in an enviable position to spell out the substantively verifiable manner in which the very perception of order will contribute to freeing one from compulsive repetition.

This compulsive repetition could be achieved either through application of a scientific systems model or a logically conceived rule model.

In his dialectic prophecy for future of sociology, Friedrichs proposed first that the dialectic model will return as a synthesis for the systems thesis and the conflict model antithesis which has arisen recently. But for the social sciences, and sociology in particular, this dialectic will still not provide an end-paradigm.
The philosophical basis for the continued dissatisfication will be two neglected perspectives. First, experience (the subject matter of social science) is not an idea or a category. And secondly, if the social sciences are to be unique, they need the contrasting dialogue of distinct epistemologies. There must continue to be a contrast between the natural sciences and philosophy in order for the social sciences to draw energy from the dialectic tension between the two.

In essence, this philosophical perspective has returned full circle to the content of social science just as the general systems theorists view had returned to the need for value judgments. It would appear that, within the historical context of a social science, neither empirical nor philosophical perspectives can be totally free of each other. Without evaluation, systems merely model molecular behaviors. And without relation to empirical considerations, evaluation leads only to an internal understanding of the subject.

Philosophical investigation does not permit explanation or control of external variables. Its definitions are purely personal and without continuity in the context of historical, social scientific representation. And introspection, although it may be an appropriate philosophical tool, is not conducive to a functional social science which uses experience as well as reflection as its subject matter.

Social scientists operating under either set of assumptions have attempted to deal with this problem by assigning the opposite point of view a role as a subject in its investigations. The demonstrative researchers have used perspective and point of view as a historical phenomenon which can be measured and ordered by empirical methods. The theorists who emphasize meaningful construct formation have
attempted to explain the measurable accumulation of data within a particular perspective on the basis of the historical context which influences evaluative and definitional choices.

Part B will review these investigations with a focus which will narrow from both directions onto the subject matter of the history of perspectives in personality theory. These applications of theoretical assumptions will be evaluated on the basis of their ability to incorporate the opposite perspective into their methodology without compromising its intent.
Part B

An expert seldom gives an objective view. He gives his own view.

Morarji Desai

The majority of research done in the social sciences has been developed with one of the two primary perspectives: demonstrative or dialectic.

Theoreticians operating within the first perspective generally count the material or behavioral productions of other men and infer a particular theoretical ordering from that information. In some cases, they begin with a particular theoretical inference and search for data which will fit the conceptual model. In either instance, their emphasis is on discreet, measurable phenomena which can be organized, preferably in a system. Within this often reached circle of social science, perspective becomes a unit when knowledge is the system.

Demonstrative investigations within the framework of an assumed knowledge system (the external object) can include linear or interactive research and modeling. Although systems theories are more appropriate for a modern historical context, many were built upon the data collected and with the patterns established under linear, analytic guidelines.
Dialectic theoreticians attempt to construct a logical sequence of historical interaction and definition which would aid in understanding the development of a particular perspective at a particular point in time. Their constructs are based on their own perception of historical events which they believe empirically reflect choices which were made. The functional relations between these choices and evaluative perspectives is developed as the subject matter for a theory of change over time. These various molar theories, constructed on the basis of selective, judgmental perceptions, are offered in contrast to the molecular models of the demonstrative social scientists.

Beginning with the demonstrative perspective, the content in this section will review the history of ideas (in contrast to the sociology of knowledge); the empirical history of perspective in psychology (in contrast to theories of why men make particular value judgments in the discipline); and proposed models for testing hypotheses on the historical patterns of perspective in personality theory (in contrast to theories of justification for particular theoretical behavior).

(I am) acutely aware of the difficulties created by saying that when Aristotle and Galileo looked at swinging stones, the first saw constrained fall, the second a pendulum. Nevertheless, I am convinced that we must learn to make sense of sentences that at least resemble these.

Thomas S. Kuhn

The distinction made in this section between the history of ideas and the sociology of knowledge will be based on definitions given to the two labels by G. Boas (1969). According to Boas, the history of ideas refers to the things one knows and the sociology of
knowledge refers to the ways of knowing.

The history of ideas will therefore emphasize the growth and direction of ideas as data. The focus will be on accumulation over time with particular concern given to the patterns of growth. Perspectives will be used as a subcategory of ideas which may or may not be included in the research.

Many of the original studies on the history of ideas were done in a straightforward, linear fashion and most were done on the history of science. They produced models of overlapping neighborhoods (Polanyi, 1962), snowballing contacts (Mulling, 1968a), a tree with branches (Holton, 1962), and lobes separated by recesses of varying depths and widths, (Menard, 1971). Menard's studies also provided a number of descriptions of statistical behaviors of populations of scientists. For example, a small proportion of the scientists write most of the papers; and the more scientific the work done, the less the name of the scientist was recognized. He developed the use of citation measures as a measure of quality and an index of popularity for a specialty. In an organismic conception of society, Menard also described the growth, change, stability, contraction and decay of careers and specialty areas. He defined science as material published in scientific journals, and as a result of his measures of this unit, postulated two limiting ratios: a constant fraction of the GNP or a constant fraction of the population.

Price (1963) used a number of quantitative indicators to demonstrate that science has been doubling every 10-15 years since 1700. The literature doubles every 10 years and research even more rapidly. He explained this unrestricted exponential as an internal
process related to the primary nature of scientific experience.

Diana Crane (1972) took this principle one step further and postulated a logistic pattern of growth for the social sciences as well. Although different subspecialties are functional at different periods, reflecting sociocultural judgments, the overall enterprise was seen as cumulative. Based on a number of sociometric studies related to internal growth, Crana developed a model of invisible colleges which are related to but not identical to Kadushin's (1966, 1968) social circle determinants of idea system structures. Crane's system focuses on small solidarity groups through which ideas are filtered down. Some degree of closure is necessary for scientific knowledge to become cumulative and grow. These groups in turn provide for the collection of data, theorizing, and publication.

She supported this model with collected data on sociometric ties in the field of rural sociology and other areas which show a period of exponential growth. In rural sociology, for example, she found that 96% of the theoretical publications appeared after 1956 when the period of exponential growth was 1950-1960. She interpreted this as a need to create order as a result of the press of data collected. She also found, however, that innovations at this time became increasingly specialized and less original.

Other hypotheses which were derived from her massive accumulation of data on empirical productions and sociometric ties included:

A. Four stages of scientific production; 1) a preliminary stage when absolute increments are small; 2) a period of exponential growth; 3) the rate declines but the increments are approximately constant; and 4) the rate and absolute numbers decline and approach zero.
B. In-group communication is less convergent in the social sciences, but there is an internal bonding because outsiders are seldom agreed upon. C. Innovations come first, the exponential growth. (Supported by Coleman, et al. 1966) D. Opinion leaders read more and transmit summaries. The innovators are usually a few people who do a lot. (This is also supported by Griffith and Miller, 1969, who found that only 2200 out of approximately 27,000 psychologists had published at least one paper per year between 1959-1963.) E. The first generation publishes more general, more theoretical and more often cited articles. F. Shared "codes" limit solidarity groups and lead to schools. Subgroups form and boundaries emerge across which ideas do not disseminate. G. There is a honeycomb structure of interrelationships in the sciences and social sciences and disentanglement may be dependent upon how narrowly a question can be posed.

Nicholas Stehr (1975) incorporated much of this information into his model of knowledge accumulation in the social sciences. He also included evidence on the logistic patterns which emerge in the number of journals, number of abstracts, number of papers published, number of scientists, and patterns in the specialities. He postulated that, in the pre-paradigmatic social sciences, the observed uneven development of specialities is related not only to internal structural and cognitive factors, but also to overall societal conditions.

By empirically observing rates of membership growth in a declining specialty (Marriage and Family) and a growing specialty (Political Sociology), Stehr was able to support a hypothesis which states that the young sociologists entered the growing specialties and stayed
with them. According to Stehr, these specialties are not pre-paradigmatic. He referred to Kuhn's original statement that frequent debates serve to define schools rather than produce consenus. Kuhn further stated that,

> the members of all scientific communities, including the schools of the "pre-paradigmatic" period, share the sorts of elements which I have collectively labelled a "paradigm." What changes is not the presence of a paradigm but rather its nature.  

Stehr did a number of studies to test hypotheses relating to this perception of paradigms. Some of his findings were:

A. Discontinuity in a specialty is positively correlated with new members. B. The relative growth rate of political sociology is associated with discontinuity in related areas. C. The younger members of the declining areas emphasize theory more often than do older members. In growing areas, the older members are more likely to be theorists and the younger members go into applied areas. D. The cognitive domain of each specialty is not independent of the cognitive domain in other specialties. The effects of differential growth rates on cognitive domains are insignificant, however. Therefore "the cognitive development of a sociological specialty is not arrested because of a decline or a stagnation in the role of the development of the size of its membership, since a turnover in membership continues to be characteristic of the specialty."

In relation to external conditions, Stehr found: A. There was a shift in the orientation of younger sociologists which corresponded to changing socio-historical conditions (e.g. the growth of political interest and the decline in commitment to marriage and family.)
B. In accordance with the previous findings, the age of degree candidates in marriage and family was significantly older.

C. Also in keeping with a socio-cultural parameter, the ratio of females to males is twice as large in marriage and family.

D. A saturation level may soon be reached for political sociologists based on current projections. (This suggests a supply-demand system with limits.)

Stehr concluded that age related factors are one of the significant systemic features external to the cognitive-structural framework of the discipline.

These studies on the history of ideas have processed massive amounts of data on the level of mass behaviors. Operating within the context of demonstrative, scientific investigation, they have measured only the behaviors that were included within their perspective. These behaviors have been organized according to a variety of systems, none of which accounts for the action of a single individual. The data comprise an inventory of historical statistics which may contain repeatable patterns. However, the acts have no meanings beyond their systemic position and therefore do not constitute social science. The theories which have been constructed to fit the data attempt to bridge this gap by defining the context in which specific behavioral patterns occur. None of the theories, however, could be used to understand deviant behavior patterns, changes in patterns which were not specific responses to given stimuli, or the underlying evaluative decisions which are assumed account for individual decisions to change paradigms.

One possible explanation for the changes in patterns of other
scientific systems has been given in the theory of irreversible thermodynamics: random, entropic movement. One scientist used this theory to attempt to close the gap between scientific explanation and contingency.

A.S. Iberall (1974), in using a more modern version of systems which includes indeterminism, was able to conceptualize history as a thermodynamic process. The system is deterministic but the outcome is not predetermined. For example, two clocks set for exactly the same time and given an unlimited energy source will not remain in synchrony indefinitely. The model offered is not an energy conserving system but an entropic process which forces indeterminate phases on a deterministic process. The thesis consists of 8 parts.

1. The preservation of form and function represent the system. Near constants can be extracted from what would otherwise be random motion. "In short, provided there is ample time for, and a sufficient number of collisions, there exists a physical thermodynamic description for the macroscopic behavior of a system during a transient relaxation."

2. Equations of change which describe the individual macroscopic performance cycles introduce entropy into the vast time and space within which the system operates.

3. The first equation of change in living systems (including history) must deal with conservation of numbers (or populations). The idea of the summational invariant rather than statistical fluctuations is stressed. The equation of change must therefore be based on those extra-systemic determinants which alter growth rates.

The time scale of scientific history must be generational with
30 year relaxations. Iberall noted that each system is marked by a developmental cycle. Events are scaled similar to memories. An individual does not remember what happened at each hour or year. General details lay on a much longer scale of individual growth.

Relating the 30 year cycles to kinetic theory, Iberall postulated the achievement of "equilibrium" in 2-10 relaxation times. Thus a thermodynamic historical perspective requires a 100-300 year time scale. (This is similar to the scale posed by Rashevsky.) With a more limited scale, the historian must read too much into the recorded data. Iberall believed the larger perspective is crucial to the evaluation of population changes.

4. The second equation of change must deal with the conservation of energy. The lifetime must scale the perspective for this equation which describes a circular causality. This process reveals a near subsistence level of energy input for the species as a whole based on a saturation level of population.

5. The third equation of change deals with the momentum of the system. There are wave modes and diffusive modes of action in long term evolution.

6. There may be an equilibrium of change to describe genetic evolution.

7. There is an equation of change for man's learned and transmitted heritage.

8. There is a summational invariant of human value and a corresponding equation of change.

Ignoring for the moment the fact that this indeterministic system has become non-functional by virtue of its own temporal limitations,
the fact remains that it has intended to account for change in human values relative to a mathematical formula. In the push to incorporate all within a single conceptual scheme, there has been no examination of the underlying assumption which renders measurements of human judgments unscientific and definitional rather than explainable.

This same conceptual flaw underlies three of the more well-developed systems models of social scientific knowledge. These systems were designed by Parsons (1971), Dupre (1975), and Minsky (1975).

For we all of us, grave or light, get our thoughts entangled in metaphors, and act fatally on the strength of them.

George Eliot
*Middlemarch*

In his analysis of behavior which has attained the action level, Parsons developed a four function model which relates the interactive effects of environment behavior systems, cultural meaning systems, personalities, and social systems. According to Parsons, the environment displays positive entropy and the system negative entropy. The system moves in the direction of greater stability in the relations of the internal patterns to the environment. Thus, in an evolutionary sense, the system is adaptive and functional.

There are four distinct functions: pattern maintenance (cultural system), integration (social system), goal-attainment (personality), and adaptation (behavioral organism). These occur in relation to two environments -- the physical/organic and the level of "ultimate reality". The cybernetic relations of the interaction
are linear related to this same line of development. The high energy level (that of conditions) lines up with the behavioral organism and the high information level (that of controls) relates most directly to the cultural system. In between these two levels is an intermediate area with a hierarchy of conditioning and controlling factors.

Parsons justified the inclusion of a non-empirical realm (that of the cultural system of symbolic meaning) with two empirical considerations. The first reason for inclusion is the teleological character of the organism in question. The second consideration is that living systems evolve on an action level as well as on organic levels. Systematization is appropriate because to evolve is not random but adaptive.

According to Parsons, this adaptation is not the result of an internal direction determined by emergent ideas, "...at the action level what is more prevalent are attempts to legitimate selections among alternative paths by invoking some source of authority outside the system as currently conceived by the acting units."

Parsons (1971) described the pattern of the social sciences in a cybernetic feedback model. He suggested a clockwise movement around the system and that a spiral staircase image would probably be more appropriate. Parsons based his model on an assumption of organismic adaptability similar to the one reviewed earlier in the section on evolutionary perspectives in sociology. The homology between symbolic and molecular interactions is never questioned on the level of assumptions and they are integrated with molecular patterns
on the basis of structural similarities. Assumptions of nomothetic behavior and uniform judgments (at least in a probabilistic sense) are not mentioned in a definitional context. In fact, definition is virtually excluded by the emphasis on explanation.

Dupre (1975) extended Parson's general action system model. He developed a hierarchy of relationships which span the entire biocultural scale of systems. The reference point for his system is Parsons cultural level which shapes the processes and patterns of society and meanings. From there, Dupre constructed a system of nested file stacks representing various information levels.

The first four subsystems are equivalent to those in Parson's model: behavioral system, personality system, social system and cultural system. Each is related to the four functions: adaptation, goal attainment, integration, and pattern maintenance. Dupre added the earth ecosystem, the solar system, and the galactic system. Measurements in Dupre's system are of inputs and outputs: the contents of the file can never be assessed. There is a unidirectional flow of information from the level of DNA (behavioral organism). There is a circular feedback on all levels except for the level of DNA which feeds back only into itself. Each level establishes equilibrium within the pattern-maintenance function.

Since the levels are nested inside each other rather than physically separate, distance between the levels is measured in terms of information distance rather than physical distance. The horizontal coordinate for this file stack is time.

On levels one and two, Dupre described ontogenetic time.
The duration here is set by a particular genetic program. Levels three and four have reference to phylogenetic time with the limits imposed by a human gene pool. The outer limit of level five is the total duration of phylogenetic time.

Dupre used the term Darwinian trajectory to explain the evolutionary relationships of the file stacks which correspond to the different time coordinates. According to Dupre, Darwin's evolutionary scheme is misunderstood when it is represented as a tree with branches and a vertical axis of physical time. In outlining the cybernetic characteristics of the various living systems, Dupre measured units in terms of generations. Gene flows are determined by networks, but the core is an esoteric box.

The trajectory intersects with the observing organism at level five -- that of the earth ecosystem. From here the view is stereoscopic over the various lower levels down to molecular biology. The observer cannot be placed outside the file stack nor outside the Darwinian trajectory. He cannot, therefore be externally objective or obtain a perspective on the whole from a lower level. The observer can now perceive himself from the physical ecosystem into any of Parson's subsystems.

Whereas Dupre emphasized time dimensions superimposed on a three dimensional image of the information system, Minsky (1975) attempted to develop the three dimensional nature of the knowledge system.

Minsky modeled the human learning system with the concept of framing. The frame is a structure for representing entire situations rather than discrete units or bits of knowledge. There are many
overlapping and coexisting frames for representing different kinds of information about the situation. Some frame expectations, others are functional or instructive.

The image of a frame that Minsky represented is that of a network with nodes and relations. The top levels of the frame are fixed and represent consistencies over situations. The bottom levels have terminals into which specific data can fit.

There are frame systems of related frames. Actions in one frame can transform related frames. Different frames of a system describe a scene from different viewpoints, but they share common terminals from which to coordinate information.

Their terminals of a frame are generally filled with default assignments. These provide useful generalizations and can be easily replaced by new items of more relevant information. Frame systems are linked by an information retrieval network which can provide replacement frames when the current frame does not fit reality.

Minsky compared a shift in paradigm to the debugging of a system. He described the theory proposed by Goldstein and Sussman to explain a procedure. The techniques are:

1. Make a crude first attempt by the first order method of simply putting together procedures that separately achieve individual goals.
2. If something goes wrong, try to characterize one of the defects as a specific (and undesirable) kind of interaction between the two procedures.
3. Apply a "debugging" technique that, according to a record in memory, is good at repairing that specific kind of interaction.
4. Summarize the experience to add to the "debugging" techniques library in memory.

The closeness of this procedure to older cognitive maps is
one reason why revolutionary paradigms do not always appear when
they are needed. Minsky recognized the limitations of his own
framing technique in the light of this problem and acknowledged that
it would take considerable bootstrapping to pull a new paradigm out
of old frames.

Once again when the systematist returns to the level of theory
rather than method, he reaches the problem of construction based
only on current programs. The model cannot serve its representative
purpose if it sticks to the scientific assumptions of causality
rather than goal incorporating action.

The philosophers, working within the sociology of knowledge,
attempt to come to grips with this problem in its historical context
of conceptual definition. Their theories on the sociology of
knowledge include purposive learning by individuals as an essential
element of theoretical constructs rather than as an independent,
adaptive program. This does not mean that the relations between
internal and external experience are entirely dependent upon
unknowable, personal fictions.

Robert W. Friedrichs (1970) postulated a theory for the sociology
of knowledge which would include a recognition of both conflicting
and nested frames of reference.

The eyes we all have -- scientists and non-scientists
alike -- register experiences that cluster about the compli-
mentary poles of the intrasubjective and the intersubjective,
the unique and the recurrent, the existential and the relational
.... Each of the alternative lenses rests upon (or is nested
within) the prior experience and perceptive capacity of the
given eye for both its utility and its meaning. At one level,
we may speak appropriately of alternating lenses or frames of
discourse. But ... a nested hierarchy of lenses -- one
artificial and one given -- is the more fundamental epi-
stonomological paradigm.
Friedrichs traced the historical development of many of these interactive, internal and external relations which influence perspective. He included such constructs as schools (defined within a branching model of historical development), gatekeepers (the key figures who write the texts which determine the perspective of the younger generation), borrowing (of concepts general to the academic environment), religious traditions (which shape value preferences), the economy (both in terms of principles such as functionalism and in terms of behavior patterns), technology (methods shaping theories), the climate of the times (a vague sociocultural perspective reflecting changes in situations), sociocultural realities (specific needs of the populace; goal directed activities), philosophy, consumer demands (government, public and students), goals (individual judgments which are communilized by communication), self-image (which affects interactions with the subject matter), and an inherent dialectic (emergents contained in the interactive nature of the observer, his perception, and the alteration of his subject matter through that perception.). Friedrichs traced this final variable to its historical relation with systems theory and conflict theory within sociology.

....the paradigms of which Kuhn spoke appeared to be functions of, or at least secondary to, a more primary level. The system paradigm appeared to be a product of a prior commitment to a paradigmatic image of the sociologist as value-free; the conflict paradigm an outcome of the paradigmatic vision of the sociologist as engage. 49

Recent ecological perspectives (for example, the collection edited by Steneck, Science and Society, 1975) incorporate this perspective
on the social sciences into their ecological view of the knowledge system as an area where value judgments are a requirement for humanitarian science.

Although Friedrichs mentioned most of the commonly used parameters for interpreting social influences on perspective, there are a few other theories which need to be mentioned in the context of historical constructs which may have interactively shaped perception on perspective.

Among the early sociologists of knowledge, Marx was one of the first to definitively state that economic patterns shape ideas. Weber, on the other hand, perceived ideas as the determining agents which shaped society and social class relations. Mannheim perceived the history of ideas in terms of a generational conflict between traditional structures and goals and new world views which perpetuated social growth and change. Thus, both continuity and change are provided for the culture through the idea system.

Kuhn (1950), in his popular theory of scientific revolutions, proposed a sequence of events which described a change in paradigm. First, a paradigm or model exists which sets the guidelines for research and determines which problems are within the realm of science. Normal science occurs at this stage. Discrepancies begin to occur. There is a crisis. Many new paradigms are explored and philosophy is examined. Finally, a new paradigm is accepted. This theory, however, in explaining historical development in the sciences, was not considered to be a reflection on the social sciences. Kuhn labeled the social sciences pre-paradigmatic.

W. Hagstrom, although also referring specifically to scientific
perspective, offered a theory of evaluative content to explain
changes in paradigms. He theorized that the major source of deviant
behavior in the sciences is due to competition for recognition which
occurs when there is agreement on the problems to be solved and
many are capable of solving them.

Hume visualized the system as a clockwork mechanism which could
be stopped by a grain of dust which produces a significant difference.
(This philosopher's model may have been the forerunner of Iberall's
indeterministic system). Murphy and Kovach (1972) judged communication
to be the component crucial to geometric growth of an idea system.
Nicholas Rescher described the adoption of value preferences as a
utility function where costs of particular selective perceptions
are weighed against the advantages.

Theodore Gordon, scientist and director of the Advanced Space
Stations and Planetary Systems at Douglas Aircraft commented that
the direction of research perspective is shaped by four factors:
the researcher's interests, an accepted challenge, the solveability
of the problem, and the fundability of the project. He believed
that all four are conditioned by the value system of the larger
society.

Boring (1955) referred to Goethe's theory of the Zeitgeist as the
primary summary variable which describes all parametric and internal
influences on perspective. Originally, the concept was used to
refer primarily to the unconscious determinism which shaped ideas.
This was in keeping with a historical context of mentalistic action.

Now, however, Boring accepted the "wisdom of the ages" in
assigning the Zeitgeist a physicalistic role as the social interaction
and communication which constitutes the input to the individual's information processing system. His image of the individual's evolving knowledge system is that of a stream bounded on both sides by the limits of communication but flowing continuously in the absence of an ultimate cataclysm.

According to Boring, the Zeitgeist has a dual role in scientific progress, sometimes supporting and sometimes limiting the development of new ideas. Smaller Zeitgeists develop around schools with the same effect. The recurrent nature of a change in Zeitgeist reinforces the concept of a continual reevaluation of truth for the sciences, according to Boring, who acknowledged S.S. Stevens comment that truth in science is that with which competent contemporary opinion does not disagree.

The preceding theoretical constructs which define internal and external influences on the development of perspective provide the basis for an understanding of individual judgments or evaluations. What they do not establish are criteria for recognizing and utilizing this information. They can be used, however, as the background assumptions for more empirical research. And, in fact, many do reappear in the constructs which are operationally defined by empirical historians in psychology.

In psychology there are experimental methods and conceptual confusion.

Ludwig Wittgenstein

On this twice removed level of demonstrative investigation, the assumptions and purposes of scientific reasoning are seldom mentioned.
Instead, research operates from the principles of theoretical constructs formed at the next higher level of abstraction, which is in this instance the description of social scientific perspective. It is assumed, for example, in empirical investigations, that there is an independent explanation for a particular behavior and that the behavior can be objectively and operationally defined. The researcher evaluates only the secondary assumptions which deal with his particular theory of historical development.

Even the purposes of scientific investigation are lost on this secondary level of intent. The purpose of the research is to evaluate an independently existing order which exists between those inferentially defined events. Whether or not this order reveals any functional relationship (which can be predicted and/or controlled in the absence of any future knowledge about the state of environmental parameters) is usually not considered. The results of the studies are generally closer in principle to those of philosophical understanding. However, since they have been based in principle upon scientific methods and assumptions, they cannot be integrated into inductive, definitional knowledge.

The recent trend to add numbers to history, described by Barzun (1974) as the inventory method, has added to this conceptual confusion. Armed with the statistical methods devised for "scientific investigation," the data collectors invade the libraries and departments. They intend to "naturally observe" the historical developments in psychology by measuring their frequency of occurrence on "objective scales."

A few, including those who attempt to base their work on the
theories of Watson or Boring, have an admitted theoretical construction. However very little attention is given to the perspective or directionality (especially presentism) which biases their work in the context of this framework.

Other investigators, who are not as sure where their ideas originated, are even more likely to claim objectivity in their inventory scale. None examine the underlying assumptions of scientific methods before applying these tools to the purposes of social historical interpretation.

This critique on methods is not intended as an evaluation of the content of the research. Some of the studies are quite good, and, if given a perspective and evaluation of assumptions, would provide the basis for historical understanding.

It is the implicit assumption of external validity and scientific "reality" or truth, which prevents such studies from being interpreted as historically and individually relative. Instead, the claim to truth is tested on the basis of theoretical constructs and hypotheses which correlate with the measurable data.

One of the earlier studies done on the history of psychology tested the existence of a "flight from reality" response to the frustrations of World War I. In 1942, Elsor operationally defined the measure of this construct as psychic research and books on spiritualism published during the war. He observed an increase in this behavior during the war which he attributed to the motivational factor of "flight from reality."

David Krantz (1972) measured the differences between schools and systems in psychology from the perspective that systems imply
an ahistorical, related set of concepts whereas schools imply the affiliation of particular historical individuals to such concepts. This perspective informed his definitions and tested the internal validity of those definitions without mentioning the assumptions of scientific measurability.

Krantz devised two methods for studying the interrelationships of schools and systems and applied them to internal and external interactions of operant and non-operant psychology as defined by journal affiliation. Method one was to describe episodes in the development of relationships and method two was to examine the operant conditioning psychologists' interpretation of these relationships.

Using self and reciprocal citation data from operant and non-operant journals, Krantz found that the Journal of the Experimental Analysis of Behavior (operant) is isolating itself by increasing self-citation. Its number of citations in other journals is also dropping.

The readers' interpretations of the citation data referred to publication dispersion (an unintentional in-group), language differences, topic coverage, inadequacies in the literature, different realms of research, and failure of the operant conditioners.

Krantz regarded this dispersal of groups as inherent to an issue-oriented discipline. Focus determines specific content since broad issues cannot be handled directly. And the lenses for this focus are the scientist's beliefs. His perception is selective and the beliefs are not themselves empirically verifiable.

Thus, Krantz returned in a roundabout way to the crucial limiting
feature of scientific investigation in the social sciences without evaluating its impact on the functionality of his own research.

Other empirical studies which neglect to evaluate the gap between theoretical constructs and limiting assumptions are those behavioral inventories of data accumulation in the discipline.

Orr (1970) reported that the amount of information in a sample core of psychological journals (130) doubled in 10 years from 30,000 in 1958 to over 61,000 in 1968. During the same period, the coverage of Psychological Abstracts also doubled. The absolute amount of information increased five-fold.

A value judgment on the quality of this information was operationally defined by Garvey and Griffith (1966) as originality. They reported doubts that this increase parallels a growth in knowledge since 67% of all published psychological material had been reported somewhere before.

Orr and Kassab (1965) attempted to devise a rating scale to separate good from bad articles (or noise in the system). They found that not only were multiple operations required but also a persistent bias was inherent. This result could also have been predicted without multiple trials had the underlying assumptions of "scientific" evaluation and objective definition been recognized.

Another empirical attempt at evaluation was made by Jon Roechelein (1972). He used a form of natural observation to assess the impact of great men in psychology on the basis of how often their names appeared in introductory psychology texts. (This is an interesting operational definition of quality in light of Menard's study on recognition of names and the elementary level of
most functionally-oriented texts). In addition, he categorized, subjectively, each psychologist as belonging to either the tender or tough-minded group.

Ratings were done on the regular texts and the indexes. A Mann-Whitney U Test indicated no significant differences on the tough v. tender minded sample. However, there were significant differences in the appearance of individual names.

In a follow-up study, (1974), he compared eponymy in early (1920-39) versus recent (1968-71) texts. The Mann-Whitney U Test yeilded a significantly greater ratio of naming in more recent texts. Frequency of naming and citations was significantly different for some individuals but not for others. Roehslein interpreted this as a reflection of interest and the "spirit of the times."

A contrasting tradition in the empirical study of the history of psychology is represented by Robert Watson and similar theorists who use data primarily to support already well-developed theories.

Although these theorists come no closer to recognizing contradictions in underlying assumptions, they do admit to a particular theoretical perspective which the reader is free to evaluate as it relates to the content of their research.

Robert Watson (1963) began his career as historian of psychology with a survey of the great men in the field. It was after attempting to design a history of the field around these men that Watson recognized the inherent limitation of this unitary approach. His more recent work has catalogued such diverse variables as schools, prescriptions, accumulation of data, numbers of journals, divisions
of the APA, most frequently recognized psychologists' names, and numbers of psychologists. His empirical surveys have led him to conclude that "the quantity of research is not merely increasing; the rate is a positively accelerated one."

In an early, exploratory article on the history of American psychology, Watson (1965) reviewed several potential sources of influence for psychology. In the early years, he saw the influence as coming from the great men -- James, Hall, Cattell, Wundt, Titchener. Watson called the period from 1910 through the early 1930's the years of the schools -- Functionalistic, Behavioristic, Gestalt and Psychoanalysis. He considered certain social forces -- industrialization, secularization and urbanization -- the background for the professionalization and increased social orientations of American psychology. World War II was a significant example of just such a social force.

Recognizing in this early article that psychology was still pre-paradigmatic in the Kuhnian sense, Watson (1967) defined a prescription. Prescriptions "are those prevailing inclinations or tendencies to behave in a definable way in a particular science in a particular country at a particular time. ... Some ... can be identified as dominant, others as counter-dominant." A prescription does not necessarily define content for the field as does a paradigm. In addition, prescriptions can be selected as alternatives rather than inherited as dogma.

Watson (1971b) later arranged his prescriptions in 18 contrasting pairs which provided the framework for many of his later empirical studies. They are presented as opposing trends because that
is one of the ways in which they function. Examples of these sets:

Empiricism - Rationalism (major, if not exclusive source of knowledge if experience - is reason)

Functionalism - Structuralism (psychological categories are activities - are contents )

Mechanism-Vitalism (activities of living beings completely explicable by physiochemical constituents - not so explicable)

Monism-Dualism (fundamental principle or entity in universe is of one kind - is of two kinds, mind and matter)

Nomotheticism-Idiographicism (emphasis upon discovering general laws - upon explaining particular events or individuals)

Watson further described his prescriptions as complex and interacting historical trends which can be contrasted but also potentially synthesized. There are degrees of commitment and prescriptions are sometimes unverbalized. Many have their roots in philosophy and some have counterparts in other sciences. A school is described as a pre-paradigmatic set of interlocking prescriptions adhered to by a leader and his followers.

Watson found his prescriptions complementary to the Zeitgeist theory because they can add content and help to explain individual differences in reactions. In their combinations and recombinations, prescriptions can form many patterns of philosophical orientation. An additional division of the prescriptions between those that relate to contentual and those that relate to methodological issues adds to the variability of the scale. Prescriptions summarize and provide a framework for historical investigation which can be used in place
of a paradigm.

Although Watson admitted that the meaning of the prescriptions can change with time, in general he contended that a basic line of descent can be traced. In addition, the description of the contents and methods used at the historical moment in question gives substance and form to the meaning of the prescription. This helps prevent a presentistic bias.

He saw his theory as serving the function of a mnemonic aid which guides observation and search. The advantages of this type of explicit theory are to be found in its clarity and observability. The limited goals of this type of research fit well with the demonstrative assumptions, but as Koch pointed out, they do not lead to more elaborate theorizing. Watson did point to another advantage in the limitation, however, in that a multi-variable approach yields significant ratings on other prescriptions which are not being investigated.

In a related study on quantifiable historical facts done with Marilyn Merrifield (1973), Watson used 9 judges to rate the names of 1040 deceased contributors to psychology for relative importance. A list of the 500 most important contributors of the past was thereby extracted. This preliminary study has provided the basis for at least two major reference books of citations and of contributions by these men. A follow-up study used a combination of sources and judgments to classify each of these 538 individuals according to nationality, fields of endeavor, and temporal periods of their contributions.

Watson is most consistently referenced as the first of the
empirical scientists to enter the area of perspectives in the history of psychology. Later researchers have borrowed both content and methodological assumptions from Watson without referring to his limited area of intent.

In their first study, Fuchs and Kawash (1974) rated Watson's 36 prescriptions on a 7 point scale according to the significance they had for one of five schools. The five schools were Structuralism, Functionalism, Behaviorism, Gestalt, and Psychoanalysis. Sixty-eight questionnaires were completed and returned by APA members of Division 26. Although some of the judges reported difficulties in assigning ratings (one defined the task as "180 evaluations of 5 undefined schools against each of 36 unclear 52 dimensions"), in general the raters raised few questions. This was interpreted by Fuchs and Kawash as meaning that the definitions were acceptable to and applied by the raters.

Various characteristics of each school were analyzed and compared. Comparisons were also made between schools on general approaches to content, method and theory and goals. There were significant differences between all schools.

Kawash and Fuchs (1974) also did a factor analysis of the ratings of the five schools of psychology on prescriptive dimensions. They attempted to reduce the number of dimensions necessary to characterize each school and obtain information on the relationships between the dimensions.

Seven reliable factors were extracted from the average ratings: naturalism, dynamism, inductivism, peripheralism, dualism, ideographicism, and molarism. Each school was subsequently characterized
by these factors according to the ratings given by the judges on each dimension.

The comparisons as well as the characteristics of each school were found to parallel the descriptions made on the basis of the ratings. In their conclusion, Kawash and Fuchs found that although the factors may not present all of the relevant prescriptions for a particular school, they are functional in providing a framework for discussion and in particular for describing theoretical perspectives.

Factor analysis in this instance is an interesting phenomenon. First, the idea is to isolate as many variables as possible, in order that conceptual themes be defined completely and descriptively. Then, one limits that number in order that the scheme be functional. The next researcher completed this circle back to a bifurcated division between tender and tough minded psychology.

Coan (1973) described the history of science as a functional process of ordering by systems of symbols with the goal of understanding. This adaptive socio-cultural mechanism is a response to "a need to control." All intellectual disciplines, including science (and therefore psychology) exist to deal with metaphysical questions. Because these are unanswerable, science attempts to answer derivatives of the problems. For example, personality theorists, unable to answer questions of cause, will and purpose, turn to issues of learning and motivation.

In regards to this conceptual theorizing, Coan recognized that there are always historical antecedents for ideas. One of the recurrent
modes of conceptualization is to view "the material universe as a continuum or as an otherwise empty space containing discrete particles."

Another thought form, shaped in part by the structure of the Indo-European languages is the "tendency to treat non-spatial relations in terms of spatial metaphors." The impact of this form on almost all areas of psychological theorizing which employ topological, dimensional or connectional models is obvious.

The search for universals has modes of expression in the arts, religion, philosophy and science. In application, it evolves into the search for simple, perfect forms. These forms can be beauty, a unified theory (e.g. GST), general principles of inquiry, or any other formula for transforming complexity and disorder into order and simplicity.

In order to truly understand history of a discipline, Coan said that a perspective on the universal level of a hierarchy is necessary. The historian must then "ascertain in a more definite way the components of the hierarchy. To define these components on various levels in terms of the experiential context that lead to symbolization would seem to call primarily for logical analysis of the questions people ask and of their interrelationships."

Coan thought that this might be possible through an empirical assessment and systematization of symbol-sets into a fixed number of classes with distinguishing features. He chose to evaluate the decisions of individuals to become psychologists as a starting point in this investigation.

In his reviews of various tests done with professionals, Coan
found 1) that psychologists and anthropologists are more verbally productive than biologists and physicists on the TAT and Rorschach and more concerned with social relationships. (Roe, 1953)

2) According to biographical data on graduate students, physics students were more socially isolated as children and disciplines more rigidly by their fathers. Psychology students had warmer relationships with their mothers, strong but conflicting family ties, more peer relations, and flexible, emotional discipline by their mothers. (Galinsky, 1961)

3) On the 16 Personality Factor Questionnaire, the scientists were more introverted, stable, anxiety free, and self-sufficient. (Cattell and Drevidahl, 1955) Coan reviewed more harshly the research which attempts to logically assign individual psychologists to particular orientations.

Coan's own method was a multivariate analysis of empirical data. Based on ratings for 54 theorists on 34 variables, Coan was able to use a factor analysis which yielded 6 oblique factors. They were subjectivism v. objectivism, holistic v. elementaristic, transpersonal v. personal, quantitative v. qualitative, dynamic v. static, endogenist v. exogenist. There were 2 second order factors: synthetic v. analytic and functional v. structural. At the third level was a weak general factor: fluid v. restrictive.

In a non-identical follow-up study, questionnaires with 120 items on theoretical orientations were given to 298 APA members. Although the factors began at 17, the general third order factor was still a fluid v. restrictive dimension.

In his analysis of the research, Coan stated that strong evidence exists that personality constructs which parallel the
fluid-restrictive dimension also determine whether an individual will be a humanist/psychologist or a scientist/psychologist. He found support for this view in the polarity offered in theory by Jung, Kretschmer, William James, L.F. Shaffer, and Fisher and Fisher.

In discussing the determinants of theoretical orientation, Coan included many variables: a conscious decision to search for particular sources of information, a shifting which makes the information personally relevant and harmonious with individual structures of perception, and historical and geographical accidents. Coan did not elaborate on the unscientific quality of unexplainable events. Nor did he attempt to assign them a purpose in an overall design for progress.

One way of avoiding this appeal to extrasystemic input is to define the system in terms of behaviors rather than perspectives and to remove the question of orientation to a level of methodological issues. This approach is more consistent with a demonstrative perspective since the ratings are done not on changing individuals but on static products.

Robert Lissitz (1969) used an empirical/evaluative approach to trace the methodological trends in clinical research. He rated articles from 3 popular journals at 10 year intervals from 1910-1960. The Journal of Abnormal and Social Psychology, The American Journal of Psychiatry and the Journal of Nervous and Mental Disease were selected on the basis of their circulation, their clinical content, and their length of publication.

Ratings were based solely on the design characteristics of the articles. Categories included: non-empirical, verbal-empirical
(case histories, descriptions, pictures, etc.), numerical-empirical (including data, charts, or graphs), and manipulative (experimental).

Classification was based on the most empirical level reached. For example, if an article contained both case histories and graphs, it was rated numerical-empirical. A chi-square analysis indicated that the 3 factors (year, journal, and category) were not independent. Although all journals became more manipulative, the psychiatry journals, especially the JNMD, changed least. The changeover in the JASP took place in 1940 with the two least important (numerical empirical and manipulative) becoming the more important.

On the basis of several historical accounts (including Boring and Shyrock) Lissitz postulated that the inter-journal differences might be due to psychology's chronic insecurity at not having a scientific identity. Medicine, on the other hand, is a traditionally more respected profession which has been able to maintain an intuitive approach and a scientific image.

Secondly, there is a difference in the content of the research which leads to different methods via different questions. According to Lissitz, the motivation and justification may provide an interactive perspective for looking at the data. The introduction of justification as a theoretical explanation closes the circle within the empirical history of psychology. The inadequacy of empirical data for complete communication is implicit in the appeal to relational post-hoc hypotheses.

The recognition that there may be an interaction between causal motivation and evaluative justification is rarely mentioned even in the context of theoretical history, however.
The man who proposes a theory makes a choice -- an imaginative choice which outstrips the facts.

J. Bronowski

One of the few places where this interaction can be observed is in the traditional history of psychology text, such as Murphy and Kovach's *Historical Introduction to Modern Psychology* (1972). The general chronological outline traces the development of specialty areas over time and in comparison to other theories of their time. The conclusion they reached was that all important developments in psychology resulted from the importation of an idea from another discipline. Although they intended their evaluation to be fair, it was necessarily dominated by a functional presentism.

The primary criticism lies not in this acknowledged bias, however, but in the underlying dialectical intent of their argument. Murphy and Kovach were guided by and concluded with a series of questions which implicitly shape their perspective on the content. In their failure to justify their perspective, they left the reader with an assumed truth -- the dialectic assumption that particular questions necessarily emerge from contrasts and that they emerge in relation to rules of logic.

Although in general this approach is preferable in the context of understanding historical change, it does not account for the individual nature of judgments or the human focus of social science.

Allen Buss (1974) offered a complementary perspective which described changes primarily in terms of the individuals who experienced them rather than an externally identified subject matter or philosophical principle. Buss assessed the importance of Karl
Mannheim's generation theory for psychology. He emphasized present social conditions and their role in shaping the discipline.

The conditions he specifically mentioned were declining enrollment, curtailment of research funds, questioning of the role of the university, and tightening academic job markets. Through an application of Mannheim's generation theory, Buss predicted that these features would lead to a conservative, inflexible and unresponsive discipline.

The theory states that the concept of generation accounts for continuity and structural changes in society. When there is a continuous emergence of new participants and a disappearance of the old, the new ones inherit traditions and alter them slightly by selecting and emphasizing different aspects. This process accounts for gradual change.

Although the older generation may be surrounded by the same events as the younger one, because of their already formed structures of perception, the members will be having a different experience. Therefore socio-cultural change alone cannot account for the orderly process of transition. The participants must be new. There is an "evolutionary" elimination of values, theories and beliefs which were not adaptive for the culture and the new generation is free to interpret without those biases. Unique historical events serve as catalysts in creating a particular style for a generation. The older generation may set these forces in motion, but it is the younger one who will assimilate the change. In fact, an exceptional individual in the older generation makes the first breakthrough to a new paradigm, but his followers are of the new generation.
As evidence for the fact that academic psychology is not immune to socio-cultural tradition, Buss referred to Riegel's (1972a) analysis of two major growth models (quantitative and qualitative) which are related to two different socio-economic systems (capitalism and mercantilistic-socialism.)

The implications of generation theory for the future of psychology, according to Buss are: 1) fewer new academicians will be entering the universities; ideas will remain unchanged; 2) old models will be reinforced by colleagues with similar modes of assimilation; 3) the information transmitted to the new generations will become stale; 4) when a new generation finally enters there will be a generation gap sufficient to produce a scientific revolution.

Riegel (1972a) has also dealt with the dialectical relationship as it exists between the changing individual and the changing society, and between the changing scientist and his discipline. When conflicts arise, new paradigms emerge to synthesize at a higher level of analysis. According to Buss, if psychology lacks the continuous contact with new ideas, the dialectical relation between psychologists and psychology will be less active.

Riegel, however did not perceive men as entirely subject to the whims of history. He felt that once they become aware of how tightly societal conditions and political ideologies are tied to subjective experience, men can change, with their writing, the perceptions of future generations.

Harry Helson (1972) also referred to the success of individual judgments and initiatives in changing perspectives.
Diamond (1974), too, used a person-oriented method for explicating the historical development of psychology. He let the historical figures speak for themselves and revealed in an implicit comparison the common practice of ignoring historical precedents. Further, Diamong concluded that:

One important lesson to be learned from studying the history of psychology is that the fundamental viewpoints on many controversial issues were formulated independently of all experimental evidence in the modern sense of that phrase and that most men continue to take sides on them without regard to such evidence. ... The experiments of psychologists have settled only minor issues in psychology, and too often like dreams, they are wish-fulfilling. Meanwhile, advances in the other sciences, and major changes in the social structure have often exercised decisive influence on the building of psychological theories.

This critical comment on perspective in psychology provides the historical context for evaluation, which is one of the more judgmentally determined methods for historical research.

John Wettersten (1975) critically reviewed the various methods that have been used for relating the history of scientific psychology. According to Wettersten, current historians fail to deal with the problems of controversy by using five techniques: 1) vague and uncritical praise of psychological theory; 2) recognition of fact gathering regardless of the significance of the facts; 3) uncritical praise of methodological theory; 4) recognition of techniques regardless of the results they produce; and 5) discussion of careers.

He claimed that a standard text is usually used as a source for what should be included in the history. Not only does this
lead to a bias towards successful theories, it also tends toward
a unified approach since most texts do not emphasize competing
schools. If the historian does not recognize the competing
schools, he generally either writes the history of one school or
attempts to integrate the theories in a single perspective or
outcome. Bias in inherent in the first method and distortion in
the second.

Wettersten's method is one which closely relates to the author's
approach to communication. The critical evaluation of historians,
however, must be included with a critical evaluation of the subject
in order that their interpretation not be regarded as objective.
Wettersten's emphasis on judgment and comparison of perspectives
also lacks a mention of the underlying assumptions and purposes under
which the various theories have developed.

For example, modern critical evaluations, such as Wettersten's,
emphasize a systematic approach to the history of psychology without
assessing the impact of this construct on their observations. A
critical assessment of systems theories on psychological history shows
that they uniformly attempt to control time by isolating systems
(whether they are centered around perspectives, schools, or great
men) from each other and developing each within a separate, linear
chronological framework without assessing the impact of interaction
on value judgments. When the focus is on a particular level of the
knowledge system and the measurements are all taken on observable
variables, the molar perspective which shapes value judgments is lost.

In Sahakian's history (1975), metaphors clearly reveal this
isolation and objectification. In the preface, he described centers
which "are as trunklines feeding the branch lines that spread in a variety of directions as offshoots." Later he mentioned the "cartel-like" existence of schools which radiate particular psychologists. Great men were described as being surrounded by satellites and moving in a straightforward manner.

Heidbreder's *Seven Psychologies* (1933) one of the earliest histories organized systematically, offered a thread of continuity in the emphasis on common-sense psychology in each school. If common-sense can be interpreted as an earlier representative of justification, the Henle and Sullivan, in their review of Heidbreder's work also recognized the necessity for the interaction between justification and organization. "Systematic thought untempered by common sense leads to aberration; and common sense without system leads to inconsistency and superficiality."

Among the other historians who recognize and attempt to evaluate this interaction are Dorothy Ross and Brian and Lynne Mackenzie. Ross (1969) criticized Boring's theory of an interactive Zeitgeist. She rejected this construct as too broad to be functional. She also rejected its underlying assumption of a vitalistic force or existence beyond the molecular facts. She regarded this intervening variable as an obstacle to understanding. On the level of historical explanation in psychology, she claimed the concepts should be specific to the individual, the situation, and the total environment rather than removed to a level of abstraction. Ross failed to mention her own underlying assumptions, however, which are those of the systemic reductionist. In contrast to Boring's theoretical constructs, they offer little more in the way of justification for inclusion than
molecular measurability.

The Mackenzies (1974) also entered the level of underlying assumptions when they critically evaluated the interactive impact of the historian on his subject matter. In a parallel to rules of definition for human action, they stated that when a historical analysis reaches a conclusion, that conclusion cannot be independent of the rest of the analysis. Therefore, a bias towards presentism affects the work of most historians.

This practice of treating material out of context or in the context of its evolutionary contribution to modern psychology is based on the myth of value-free facts that can be viewed by an objective observer. The Mackenzies' suggestion for avoiding this form of bias was to treat psychological thought within its own historical context by evaluating it as an integral part of the intellectual history of the period. What they failed to account for is the presentism or judgmental bias present in historian's selection of relative events in the intellectual history.

The Mackenzies, for example, traced the history of the problem they were investigating to a double bind created by the scientific revolution. The result of this revolution was a complete faith in the theory of scientific reductionism. But this viewpoint had succeeded only by excluding the very phenomenon of a subjective mind which psychologists were then asked to explain within a scientific framework.

An integral part of the scientific framework was a methodology which claimed objectivity. Philosophically, science could justify this claim by selectively investigating what Galileo had distinguished
as primary qualities -- those that could be measured by external standards. Science excluded perceptions which existed only in the perceiving organism. When psychologists attempted to apply a scientific methodology to a subject matter which did not have independent validity, research was trivialized in much the same way that mechanistic models have trivialized research today.

However, in their own anti-demonstrative bias, the Mackenzies failed to point out that any method can only test the underlying assumptions. Therefore, even philosophical methods can never test the validity of competing claims to truth. Therefore, according to many social scientists, simple modeling is not inappropriate for a theory which is still very general as are most theories in the history of perspectives on personality. In fact, modeling a system and later comparing it with available data may be one of the few demonstrative methods appropriate for testing hypotheses which cannot be empirically manipulated. There is a conceptual correlation between experimental verification and model testing in this sense.

Ashby (1973) said that in the study of organization, mapping is the representing of behavior by symbols. As these same symbols are processes in the dynamic model, behavior is manipulated. A comparison of this programmed behavior with the observed behavior of the system is one way to test the possibility that the underlying assumptions are wrong (although it cannot prove them correct). This reliance on testing a possible rather than an absolute claim to truth is not inappropriate for an early prototype system methodology, given that one accepts the priority of scientific assumptions and purposes.
There are many types of models used for conceptualizing theories and testing hypotheses. The following three will be examined for 3 reasons: 1) they are appropriate for the subject matter; 2) they can be translated into computer programs (technological fit); and 3) it is easy to substitute assumptions and re-conceptualize variables. The models will be proposals constructed by the author since there were none available which dealt specifically with the history of perspective in personality theory. The content of the models will be determined by hypothetical theories and research which is similar to that done in the history of psychology. The structure and dynamics of the models are homologous to models used elsewhere in the social sciences. The proposals are:

I. A first-order system conceptualized as a diagram-flow chart. Resembling Easton's (1965) model for political systems, the model is partially open with input and output summarized in two rates. Input is disaggregated into demand and support. Functional output permits feedback and information to loop back into the system. Other features of the system include channels, selection (every decision precludes many others), centralization, control and adaptability.

II. A second-order system conceptualized as a competition model (although a predator-prey model could also be used where one opponent gains credence by attacking the other). The system is partially closed as most parametric systems affect it only indirectly (primarily in the areas of energy input and activity support). Both diagrams and equations could be used to represent the system.
III. A higher order system based on Forrester's (1971) dynamo model. The system is closed for practical purposes because of the immense difficulty in modeling a higher order open system (this refers to Berrien's black-box clause and Forrester's assumption of a closed world system). However, it is conceptualized as a subsystem of the larger system and is itself open to the effects of sub-sub systems lower in the hierarchy and contained within its "global" boundaries. The descriptions of the system will be in language, equations, and various types of diagrams.

The units, processes, auxiliary variables and external systems are for the most part interchangeable. Most of them could be used for any of the three mentioned constructions. Before selecting the particular combinations necessary to test particular hypotheses, a general sampling of the types of variables available will be presented.

Units: In learning to synthesize and summarize, most linear historians have tended to pull together and blur what would otherwise be seen as discontinuities (events, activities, etc.). They have looked for transitions to merge or bridge the turning points -- preferring to refer to continuous processes instead of the particular units of work which led to the adaptation (or the particular contingencies). If discrete units are referred to at all, they are usually the individuals involved rather than the discrete triggering behaviors which they produced. These units can be identified when a larger view of history is used. And, although this analysis would be just as single-minded as the process approach if it went no
further, when units are combined with processes in the structure of a system, the dynamic interaction can be conceptualized.

Units within the system determine what is measured, how it is defined, when interactions occur and what they determine. For a knowledge system, some of the possible units are:

I. Ideas: theories (self-defining or consensual), mini-theories, definitions.

II. Symbols: numbers, language (fuzzy or grammatically ordered), representational symbols

III. Perspectives: paradigms, Zeitgeists, prescriptions

IV. People (man's behavior is rational and follows rules when viewed as a functional part of this larger system): controllers, leading parts, triggers, catalysts, observers, responders, vitalistic force

V. Material: publications, labels, experiments, research hours or dollars, therapy hours, dollars or number of patients, schools, courses, popularity "polls",

VI. Technologies: products, employment hours, therapies

Equally important for the dynamic system is these units change over time. This measurement of the rates of processes (including input, output, feedback, etc.) can occur in many different ways.

A few of these are:

I. Behavioral: A) visual with objective or operational measure (e.g. normal science would be determined by publications/time) B) concensual cognition (e.g. a factor analysis of the characteristics of an undefinable but agreed upon quality) C) Definition (subjective, explanatory or authoritative)
II. Fuzzy relational variables (e.g. less than, greater than, etc.)

III. Arbitrary measured (concensus, subjective, random)

IV. Learning (explicit - e.g. education hours/time or implicit -- e.g. information processed/time)

Auxiliary processes, variables and measured can also include: inertia and momentum, randomness, inconsistencies, structural disaggregation (e.g. age structure), time lags, thresholds and critical periods, percentage of feedback, type of feedback, growth and decay rate assumptions (built into tables, equations, etc.), diseconomies of scale (e.g. differences can multiply and divide systems rather than unify after a certain level is reached), diminishing returns, fluctuations being in or out of phase.

The External Systems can be divided into two groups, both of which play an important role. The first type are exogenous systems which form the "limitless" environmental sink for the parametric systems. Parametric systems are those which interact with either the boundaries of the primary system or the primary system itself.

In order to describe the primary system it is necessary only to know its internal structure and interaction, but in order to study prediction or postdiction it is necessary to know the interactions between systems at any relevant times.

For knowledge systems a few of the parametric and exogenous systems include: social environment (family structure, culture, religion, role of education, role of psychology), politics, economy (employment opportunities, availability of money), resources (human, materials, natural), technology (progressive, decaying,
sustaining), other disciplines.

To demonstrate the relation between specific hypotheses, methods of modeling and the variables used, three specific system models will now be presented.

System I is based on the Easton model and first-order modeling methodology previously described. The hypothesis to be tested will be as follows: Personality theorists attempt to explain behavior which is most pervasive in their culture. Extreme behaviors are more easily explained by organismic theories which take pressure and responsibility off of the therapist and society. Minor deviance from the norm can more safely be attributed to environmental factors and is somewhat responsive to behavioral manipulation. It would follow, therefore, that war would be associated with personality theories which rely on organismic variables (death instinct, aggressive instincts, etc.) and calmer periods would be correlated with more environmental models and socio-economic factors.

Wars have been occurring approximately every 20 years. If these types of theorizing were to have a duration of 10 years (the estimated most productive span of the average psychologist) a new cycle of organismic theorizing would begin every 20 years. This cycle would most likely follow the war by a short time lag. During the war, psychologists trained during the peacetime period would be attempting to apply their behavioral models. In part, their frustrations would be passed on to the coming generation as a reason for change. In addition, war-time boosts to economies would permit universities to support non-productive organismic theorists, whereas the subsequent recessions preceding the next war would require more
substantive, behavioral output. The age structure of theorists v. productive members v. impressionable students could also be worked into this model.

This is a first order system. The state of a particular prescription (organismic or environmental) is dependent upon the internal interactions and external effects. The two types of prescriptions do not interact with each other but rather with parametric systems. (See Figure 1)

Of course, as a model which has its assumptions determining its internal validity, the system works. But as a test of the hypothesis, this would have to be compared with available data. For the first-order system, this seems obviously a simple-minded thing to do. Revision of the hypothesis and assumptions are easily carried out with the written proposal and the model shaped accordingly. As a conceptual tool in the first order system, the model is not much more than an easily visualized diagramatic representation.

For the second order system, the mathematics are more complicated, usually non-linear, and somewhat interactive. System II is based on a competition model similar to Boulding's (1962). The hypothesis to be tested is: Two basic schools of theorizing (which will be labeled the psychology of behavior and the psychology of consciousness) are in competition for a limited number of psychologists. This level of psychologists, which for modeling purposes can be considered growing or decaying, is still finite and measurable. (Other units such as dollars, students, articles, etc. could be substituted here.)
Possible feedback loop

Theorists at (A)

(A) = Centralization and control; (B) = Selection and Adaptability

In computer form the system would reach a switch function every 10 years and reverse its rate of input at (C). Time lags would exist at (A) and (B) and possibly (C). Demands and support are channels for energy as well as information. Output is primarily information. Input energy is used for intrasystem organization and adaptation. An age structure could be worked into information feedback loop (D) which would represent the effects of greater organization (e.g. more information) on the state of the prescription itself.

A SIMPLIFIED VERSION
Thus, the system is a second order interactive system with the "populations" dependent upon each other for their levels. The interaction effect occurs as people are converted to another prescription (with a possible bandwagon effect) or alienated from one by the influence of the other.

Because the two modes of thought are relatively equal, the change in the system over time could parallel Boulding's proposal for equal populations with equal growth rates and interactive effects. Parametric systems contribute to fluctuating patterns but neither prescription is ever entirely eliminated. Competition is most intense during periods of paradigm (or perspective) change. And growth or decay is exponential during the initial period of triumph and defeat.

Other systemic features affecting relative populations include schools of origin and age structure. An important parametric system is that of job opportunities. In relation to the system, it might be considered the logistic or carrying capacity limit.

In simple mathematics, the interaction of the system might be expressed as: \( \frac{dp}{dt} = f(p,q) \); \( \frac{dq}{dt} = f(p,q) \). Or, \( \frac{dp}{dt} = ap - bpq \) and \( \frac{dq}{dt} = cq - dpq \) with a growth rate.

In this case, \( a \) and \( c \) are the net rate of increase that would occur if the other prescription did not exist (i.e. without interactive effects; possibly exponential); \( b \) and \( d \) model the negative effects of interaction on the rates of change as a measure of how often one encounters the other population.

By mathematically rearranging equations, it is possible to
reduce the number of parameters. The equations can be numerically solved by simulation on a computer using Euler's method or some other algorithm (possibly introducing Zadeh's method into the system).

In addition, a phase plane solution can be arranged by eliminating the time variable and dividing one equation by the other. The plotted solution (where one is a function of the other with time as an implicit variable) may give important information (e.g. stability, instability) without actually finding a solution.

Another level of complication can be added with a self-competition term. For example: \[ \frac{dp}{dt} = ap - bpq - ep \quad \text{and} \quad \frac{dq}{dt} = cq - dpq - fq. \]

Adding an environmental or parametric system effect (job opportunities) \(g\) and \(h\), the equations would be:

\[ \frac{dp}{dt} = ap - bpq - ep + g \quad \text{and} \quad \frac{dq}{dt} = cq - dpq - fq + h. \]

The two variables, \(g\) and \(h\), could be a table function (an assumption about job opportunities based on an analysis of its parametric systems/time). This can add non-linearity to the system if it did not already exist in the form of self-competition or other terms.

If an additional assumption is made in this system that not only are independent growth rates equal, but also that each system affects the other in the same way, solutions by Euler's method are even more accurate. In addition, if \(a\) and \(c\), \(b\) and \(d\), \(e\) and \(f\), \(p\) and \(q\), and \(g\) and \(h\) are the same, a representative model would show identical curves that are opposite.

Chances are that \(g\) and \(h\) are more complicated, however, and that \(a\) and \(c\) may be equivalent but show variations. Most likely
b and d are switch constants dependent on thresholds of g and h.

In addition, various combinations of interactive effects could still produce coexistence without the criteria of equal starting values of equal rates. For example, one population may be affected more or less by the parametric system g or h. And the other may have a greater or lesser self-limiting term or a stronger or weaker interactive term.

Validation of any particular set of terms would require intensive analysis of the data and the resulting modified model could be hypothesized as being predictive for the future given g and h. In fact, rather than limiting g and h to any specific disaggregated environmental effects (which may then have to include i and j, k and l, etc.), g and h could be used as summary terms in a more simplified model to represent the combined input of all parametric systems.

This second-order model, used to test a hypothesis of competition as the basic interaction between prescriptions, could also be useful in approaching a languages system model that postulated opposites and/or dialectics as a foundation for a knowledge system.

The assumption of a dichotomy or any bilateral system may still prove to be over-simplified, however. Although more difficult to model and more limited to a closed system approach, a higher-order system may be more appropriate for a knowledge system. The following multi-level model will be based on Forrester's Dynamo method both conceptually, mathematically, and diagramatically.

Once again, Zadeh's system of measures and solutions could be incorporated with some effort but without conceptually altering the system. Other variables could also be substituted to test
different hypotheses. The hypothesis to be visualized in this example is that there are several prescriptions which can describe theorizing and research in psychology. These levels are not necessarily exclusive. For example, Freudina theory may be partially environmental, partially organismic, partially interactive, partially deterministic, partially probabilistic, etc. Rather than create an entire prescriptive outline for psychology at this point, one will be borrowed from Watson (1965). He used an intuitive form of factor analysis to arrive at 36 prescriptions for psychology.

Modeling assumptions include: the system of intellectual activity within any particular prescription is closed and the prescriptive dimensions are finite and defineable by a factor analytic, behavioral agreement. The level of any one prescription within a school is affected by an interaction with other prescriptions within the system and their rates of publication (or information input into the system).

Also, a time lag can be visualized as existing in the negative feedback loop between the level of a prescription and the rate of information published contrary to it. A positive feedback loop with a shorter or even non-existent time lag exists between favorable publications and prescription level.

In addition, constant rates of input from other parametric systems (schools, theories, disciplines, etc.) can be programmed in as constants, switch constants (clip functions), table functions, etc. depending upon their postulated impact on the rates or levels in the primary prescription.
For purposes of simplification, the flow chart will diagram a system with only 2 prescriptions. However, any number of interactive prescriptions can be plugged into the system. Each of them can affect any or all of the other levels. (See Figure 2)

In order to produce a set of dynamo-like equations, it is necessary to keep in mind two of Forrester's (1968) principles. First, the state of the system equals the present information about the past that is necessary to predict the future. Second, variables that are essential to describe the state of the system are state variables. To arrive at state variables for this knowledge system:

- PA = Prescription A (level) and PB = Prescription B (level);
- \( \text{AR}^+ \) = the publication rate in favor of prescription A and,
- \( \text{AR}^- \) = the publication rate opposing prescription A;
- \( \text{BR}^+ \) = the publication rate in favor of prescription B, and
- \( \text{BR}^- \) = the publication rate opposing prescription B;
- DT = the time interval to be measured; \( \text{AR-CPM} \) = the opposition rate (a constant) for PA from contradictory prescriptions multiplier, and \( \text{AR-UPM} \) = the opposition rate for prescription A from unsolved problems multiplier (a constant); and \( \text{AR-DHM} \) = the opposition rate for prescription A from disproved hypotheses multiplier (a constant);
- \( \text{BR-CPM} \) = the opposition rate for PB from contradictory prescriptions (a constant), and \( \text{BR-UPM} \) = the opposition rate for PB from unsolved problems multiplier (a constant), and \( \text{BR-DHM} \) = the opposition rate for PB from disproved hypotheses multiplier (a constant);
- PSA = parametric system opposition (a constant), and RO = random opposition (human nature or linguistic, also a constant);
- \( \text{AR}^+N \) = the normal favorable publication rate (a constant), and
Publications include research and theorizing. This measure could be further disaggregated.
BR+N = the normal favorable publication for PB (a constant);
AR-N = the normal opposition publication rate for PA (a constant), and
BR-N = the normal opposition publication rate for PB (a constant);
CPFN = the contradictory prescription features normal (a constant).

In this system, the level is determined first:

PA.K = PA.J plus (DT)(AR+.JK minus AR-.IJ)  \hspace{1cm} 1. Level

Next, the rates are determined:

AR+.JK = (PA.J)(AR+N)  \hspace{1cm} 2. Rate

The next rate has been delayed one time period.

AR-.IJ = (PA.I)(ARN)(PSA)(RO)(AR-UPM)(AR-DHM)(AR-CPM.I)  \hspace{1cm} 3. Rate

The constants given could have been further dis-aggregated. The only interactive multiplier in this
simplified program is:

AR-CPM.I - TABHL (AR-CPMT, AR-CPF.I,0,10,1)  \hspace{1cm} 4. A

AR-CPMT - 1/2/4/8/16/32/64/128/256/512  \hspace{1cm} 4.1 Table

The first variable in the previous equation was a
table function which is an assumption programmed into
the model. The second variable must be determined:

AR-CPF.I = (PB.I)(CPFN)  \hspace{1cm} 5. A

This brings the program back to a level equation programmed
simultaneously. In this simplified version, it will be equivalent
to the first set of equations with B substituted for every A and
A substituted for every B.

These models are crude and have been constructed without
the benefit of data. They can be evaluated within two contexts:
theories and hypotheses. The difference between the two is
primarily in the intent.
Man imposes order on the world by creating theories. This order may or may not be one of cause and effect. (In fact, it may be that in the pre-technotronic, post-primitive era of generation-
al education, a cause and effect approach was preferred because it paralleled the passing on of information and energy over time. In the new era of instant communication and peer-group orientation, the correlational, interactive paradigm of systems may be more appropriate.)

The theories are tools for communicating and/or comparing personal definitions (where definitions contain a form of understanding or explanation). The value or worth of a theory can be measured by the clarity of its definitions. The previously described theories, in a finished form would rate high on this measure. Models which are designed for computers must be precise. This holds true whether it refers to precise numbers or precise fuzziness with carefully designed algorithms that describe the appropriate type of information.

To refine a model is to communicate more information. A model explains systems in terms of other familiar systems; a model (especially for computers) described more concisely; a model provides a simpler environment in which to test ideas; and a model permits prediction and postdiction with known variables.

In fact, prediction, explanation, and postdiction are all the same; they are isomorphic in a modeling science. They all describe a phenomenon (possibly with the wrong theory) and subsume it under a general law. The system can then be tested by running
the program to see if enough, too many or the wrong kinds of variables have been modeled in order to approximate the actual data.

How much error can be tolerated relates directly to the purpose of the model. And, since the purpose of this theory is to communicate personal definitions, whether the content is right or wrong should have little relevance to the evaluation. The use of the model in this context of a theoretical tool was explained by Robert P Abelson (1968).

The feat of imitation per se is not the important feature of simulation, but rather that successful imitation may publicly reveal the essence of the object being simulated. The model also serves the function of a careful analogy. In this role it is used primarily to discover hypotheses rather than to verify theories. 59

In historical research, where the object of investigation is not available for manipulation, the number of hypotheses generated may be directly proportional to the amount of relationships which can be discovered. The historical researcher would then collect evidence in support of not one but several predictions. (Kerlinger, 1973) Although it may not be possible to absolutely verify or refute predicted relationships in such historical research, one can at least establish rank-orders of plausibility among several alternative explanations.

Abelson also reported that the four traditional validation methods commonly used for simulation are probably not appropriate for such a social group model. These four methods are: response matching, sequential dependency, the Turing test, and experimental tests of predictions. The first two are inappropriate for group interactions and the Turing test is awkward and inconclusive. Method
four is possible only when there are no time constraints as there necessarily are in historical situations.

Instead, Abelson supported a class of methods which deals with an analysis of the distributions of properties of individual units and a comparison over time with appropriate empirical counterparts. If the model fits the data too easily, he suggested altering it to show that a lack of fit is more easily obtained. Another method of achieving confidence in the model is to generate a large number of outcome variables which can be validated.

Given that the previously suggested models have had some hypothesis generating value, section III will present a method for "testing the hypotheses" in the context of Abelson's suggestions.

First, however, the review of literature must conclude with a presentation of some of the theoretical constructs which determine the perception of historical orientations in personality theory.

There is not a single important idea or view that does not possess historical antecedents - Carl G. Jung

In their quest to be scientific, psychologists have seldom been presumptuous enough to question the meaning of the term "science". (Rychlak, 1968) As a result, they have accepted the most popular paradigm and attempted to shape their image of man to fit that perspective.

According to Rychlak, if psychologists would take their study of the philosophy of science more seriously, they would be able to convincingly present an alternative view of what constitutes science. Through the study of the historical roots of the philosophy
of science, it becomes plain that the position known as science changes over time. In fact, the unifying element is the form of evidence rather than a particular perspective. Therefore, personality theorists can remain within the philosophical folds of science with alternate orientations or perspectives.

After having conceptualized the conflicting definitional approaches which can constitute science, Rychlak attempted to unify the myriad perspectives within a framework of human reasoning. His organizational scheme is a classical demonstrative-dialectical bifurcation in understanding.

This heuristic device not only encompasses human perspectives within an organized whole, but also distinguishes human from machine-like behavior. In essence, the human organization will not have a predetermined nor even an eventual winner. The intellectual traditions have always been and will always be interactive but separate.

He found therefore, that the dichotomy is contemporary philosophy at any point in history. One can continuously see cycles of recurring issues in psychology and in the history of thought. Rychlak's particular complaint was that with the analysis of schools and theorists, historians of psychology and psychiatry seldom mention the philosophical and socio-cultural roots of their perspectives. Unacknowledged perspective becomes bias and modern personality theory has been operating under a demonstrative bias in its attempt to be perceived as a science.

In modern times, Rychlak presented the characters of Adler and Wiener as representatives of the dialectic and demonstrative
traditions. He envisioned a dialogue between the two which could be appropriately used in a historical narrative. This historical narrative is a prototype for the proposed theory of communication in the social sciences.

Adler, the scholar, philosopher, and teacher begins the dialogue with an explication of a primary philosophical topic of the early twentieth century: the correspondence v. the coherence theory of truth. "The correspondence theory is based on empiricism and holds that truth is what fits the facts, whereas the coherence theory places its emphasis on the understanding as it asks: does the item of information under consideration cohere with the entire nexus of knowledge."

Wiener, the mathematician father of cybernetics, replies that information is a unit of communication and that communication is control, for "when I control the actions of another person, I communicate a message to him."

This new world pragmatist claims that "It is important to control nature, for nature does not stand still. The universe is gradually deteriorating, losing its organization and fineness of differentiation, and melting into sameness. The central concept is entropy."

Life is defined in terms of the degree to which anything "swims against" this entropic tide by means of organization and adaptation and individuality. Wiener argues for the similarity of prototype in men and machines. "It is my thesis that the physical functioning of the living individual and the operation of some of the newer communication machines are precisely parallel in their analogous attempts to control entropy through feedback." Both men and
machines apply logic and in processing the feedback they reason demonstratively.

Adler argues back that this is impossible for humans because language is not always factual and linguistic propositions are not always true and primary.

If language were entirely denotative, discourse would not have the elaborate ramifications that it has, for the elaboration of language, its store of definitions and distinctions, is largely due to the connotative properties of its verbal elements... (and) to solve the lack of clarity engendered by connotative aspects of language, we must resort to dialectic. ...

It may be, but is not here asserted, that the end of dialectic is understanding rather than truth, that dialectic seeks to determine the meaning of propositions or opinions in debate, rather than the relative truth of them. If this were so, the conclusion of an argument by agreement, would imply the achievement of understanding, or the ability to translate mutually from one system into another, rather than the attainment of truth. Truth in dialectic or argument may mean nothing more than such agreement or translation. In other words, arguments may lead to truth when they lead to common understanding.

The search for facts concludes this dialectic discourse which is at the root of understanding. And this dialectic is a living force which never ends. Science, when it is demonstrative, kills the dialectic and philosophy keeps it alive. For the foundation of philosophy is not search for truth but for relations among propositions in discourse.

For Adler, psychoanalysis must function in this manner of philosophy as it seeks to reunite the dialectic of the split soul.

Methodologically, the historical dichotomy is now being played out with validating evidence (research method) v. procedural evidence (cognitive method). The first method correlates with a
collection of data and the second with the creative act of organization.

In personality theory, this influence of the dialectical method on theorizing has been largely unrecognized. Whereas Marx intentionally included his dialectic philosophy into the social sciences of political science, economics and sociology, "Sigmund Freud and his followers unknowingly deflected the dialectic as metaconstruct into psychology and psychiatry."

The metaconstructs are thematic paradigms through which men view their subject matter. According to Rychlak, both theorists and theories can be organized within a scheme where metaconstructs are subsumed under the overriding dialectical-demonstrative meta-metaconstruct.

Although spatially this dichotomy is viewed as a continuum, Rychlak attempted to define a middle point from which to separate the two perspectives. Traditionally, the division looks like this:

<table>
<thead>
<tr>
<th>Dialectical</th>
<th>Demonstrative</th>
</tr>
</thead>
<tbody>
<tr>
<td>idealism</td>
<td>realism</td>
</tr>
<tr>
<td>subjective</td>
<td>objective</td>
</tr>
<tr>
<td>introspection</td>
<td>extraspection</td>
</tr>
<tr>
<td>informal (hidden) theories</td>
<td>formal (explicit) theories</td>
</tr>
<tr>
<td>theory stressed</td>
<td>method stressed</td>
</tr>
<tr>
<td>cognitive method (procedural evidence)</td>
<td>research method (validating evidence)</td>
</tr>
<tr>
<td>R-R laws (researching)</td>
<td>S-R laws (experimenting)</td>
</tr>
<tr>
<td>hypothetical constructs</td>
<td>intervening variables</td>
</tr>
<tr>
<td>dualistic or pluralistic</td>
<td>monistic</td>
</tr>
<tr>
<td>intrinsic value (reasoned)</td>
<td>instrumental value (rewarded)</td>
</tr>
<tr>
<td>ethics of freedom</td>
<td>ethics of control</td>
</tr>
<tr>
<td>logical probability</td>
<td>statistical probability</td>
</tr>
<tr>
<td>soft determinism</td>
<td>hard determinism</td>
</tr>
<tr>
<td>final causes accepted (mind)</td>
<td>efficient causes stressed (body)</td>
</tr>
<tr>
<td>functional causation</td>
<td>compelling causation</td>
</tr>
<tr>
<td>knowing hedonism</td>
<td>unknowing hedonism</td>
</tr>
<tr>
<td>teleology &quot;within&quot; man</td>
<td>teleology &quot;within&quot; science</td>
</tr>
<tr>
<td>discriminant constructs</td>
<td>vehicular constructs</td>
</tr>
<tr>
<td>long line of development</td>
<td>short line of development</td>
</tr>
<tr>
<td>coherence theory of truth</td>
<td>correspondence theory of truth</td>
</tr>
</tbody>
</table>
behavior is active-stimulating
self-reflexive intelligence
contradictions accepted
create
purity or spontaneity
connotation
humanistic science (anthropomorphic)

idiographic
symbols
tenderminded
cognitive
clinicians
applied
nurture
armchair thinkers
dreamers
sophistic
sentimental
"philosophers or artists"

behavior is passive-responding
input v. output intelligence
law of contradiction accepted
communicate
clarity or definability
denotation
naturalistic science (mechanistic)
nomothetic
signs
toughminded
behavioristic
experimentalists
basic
nature
gadgeteers
reifiers
rigorous
sagacious
"scientists or engineers"

(According to Rychlak, the two traditions are nothing other than)

...two ends of the dimension of meaning itself."

In order for meaning to advance, there must be continual
shifting between the two poles. Knowledge "grows as meanings
change and as evidence is brought to bear."

Rychlak listed eight philosophical implications of his theory.

1. A final, all-encompassing theory is impossible, because
at the higher levels of abstraction all theoretical formul-
lations rest upon arbitrary premises. ...
2. At the highest level of abstraction, choices in point of
view rest upon what can only be called a value preference....
3. The worth or value of any theory is ascertainable only
in terms of the purpose it is to serve. ...
4. Values are the final causes which define the purposes
of our theories. ...
5. Theorizing is thought in the process of evolving meaning
out of existence. ...
6. Psychology suffers from a lack of idealism in theoretical
outlook. ...
7. The scientist is a theorist who moves to validate pro-
positions drawn from his thought at least some of the time. ...
8. Knowledge is a cultural product, transmitted in a supra-
individual sense. ... Science itself is such a cultural product.
Rychlak's research into historical orientations laid a strong theoretical framework which will be used as a theoretical complement for an empirical study. His dimensions of perspective provide the internal structure of analysis for a hypothetic-deductive model of the knowledge system. Nelson (1970) proposed a model for socio-cultural input to the system and Schwartz (1969) contributed a theory on the controlling or decision making functions.

Benjamin Nelson (Mora and Brand, 1970) described how the developments in psychiatry can be viewed in terms of socio-cultural models of breakthrough situations rather than in terms of a scientific model of paradigmatic revolution. According to Nelson, the hall of fame approach is the first stage in the recording of development for any field. This honors leaders in the field as well as increases the prestige of the profession.

The second method of recording history is to follow an image of gradually unfolding great ideas which are stept toward the spirit of reason. These first two approaches are basically inductive.

The third method is the objective recording first represented in A.O. Lovejoy's The Great Chain of Being:

The center of Lovejoy's work was the study of the combinations and variations of unit-ideas as they wandered across time and place, changing shapes, functions, meanings, along with their cultural and institutional settings. The lesson conveyed by this astonishing work was that over a long development of more than 2 millenia, the idea-complex known as "the great chain of being" has continually undergone change, yet remained ever the same.

This history of ideas is the first step to a scientific history of psychiatry.
Next comes a sociological method of studying the social and cultural facts which affect the history of theory and institutions. Fifth, and more recently in psychiatry, the phase of critical analysis of history has centered attention on analysis and prediction. Current needs can be met by a systematic perspective and point of departure.

In psychiatry, Nelson described the dominant matrices or models rather perspectives:

1. Platonic dialectics of estrangement and reunification

   This includes both essentialistic (archetypes, Plato's doctrine of ideas) and existentialistic (alienation, neo-Freudian and onto-analytic psychiatrists) strains. Other theorists include: Sartre, Marcuse, Jung, Marx, Lovejoy.

2. Aristotelian rationalistic model

   Perfection is rationality and defect is logical inadequacy.

3. Mechanistic models of physics

   A Galilean philosophy suggests systemic defects are externally manipulable. (Fechner, Wundt)

4. German idealist matrix

   A priori categories determine experience. (phenomenologists, Kant, Binswanger, Husserl, Heidegger, Daeinsanalyse)

5. Evolutionary perspectives: biogenetic and historicist strains (Hegel, Darwin, Nietzsche, Freud, Mead, Piaget, Sullivan)

6. Symbolic interactionist models

   The ultimate roots of this view are in historicism but its emphasis is on the communication matrix and the definitions of the situations in ongoing cultural processes.
7. Simple conflict models

There are insiders and outsiders and the insiders label the outsiders as mentally inadequate.

In psychiatry, Nelson stated that concepts must be isolated and related to problems of change and conflict. The original perception of the system must be in terms of factors and levels. For this field, the factors include:

a. the polemical contexts of theoretic constructions.
b. the protosystemic suppositions and commitments.
c. the systemic-theoretic constraints upon the amounts and sorts of evidence admitted, including the systemically prescribed and systemically proscribed hypotheses and research.
d. extrasystemic (status, power, prestige, income, organizational) factors in defining rates and kinds of permissible deviations and changes, including probabilities of recourse to variant perspectives and procedures.

Power to discriminate levels would prevent idealistic, reductive schemes of a transcending unity. The three basic levels for the social sciences generally are:

a. Topological meta-languages and substantive theories, whether of the so-called middle or any other range.
b. Methodologically formal theories and material substrate theories.
c. General theory and special theories.

One study, undertaken within a perspective which did not rely so heavily on scientific and philosophical assumptions of inherent relations, demonstrated that the understanding of motivation in the field has not been accurately modeled in a systems or rule-defining theory.

In an unpublished dissertation, Carol Schwartz (1969) compared
schools of thought in institutes of psychoanalysis with various characteristics of professional identity. She studied institutes of psychoanalysis with various characteristics of professional identity. She studied institutes which were organized outside academia and which had their own individual definitions of psychoanalytic doctrine. Her three major findings were that:

1) New institutes were formed as the result of power struggles within the parent institution -- only later did they justify their existence by distinguishing a new school of thought. 2) Psychoanalysts chose a parent institution primarily for its related prestige, practicality, and people and not for its theories.

3) Schools of thought were later adopted on the basis of a personal relationship with a role model.

Schwartz, although operating within her own eclectic perspective, combined elements of justification with those of historical patterns. Justification was used as one of the content variables which was measured operationally and later assigned a role in the system. This form of interaction between the two perspectives has been increasingly suggested in the evaluation of the literature as a possible alternative to the either/or contexts of ordering versus understanding.

On the basis of assumptions and purposes evaluated in part A of the literature review, it was demonstrated that science and philosophy had dialectically opposed perspectives on the content of the social sciences (real experience v. constructed experience). It was later recognized by social scientists operating within either perspective that each realm had inherent limitations in regards to the purposes of total communication. Philosophical investigations
were, in general, non-functional and ideographic. Scientific investigations were biased and limiting. To integrate the two, it would appear to be necessary to find some common ground. That intersection can be found in the non-contingent nature of both perspectives. Both assume an orderly, traceable pattern exists in knowledge. With this unifying principle, each can be investigated as the subject matter of the other.

A behavioral test of the hypothesis that the two can be combined will be the intention of the applications in section III. In part A, a model will be designed within the context of systems theory to describe the change in philosophical perspectives. In part B, an image will define the perception of material reality as the content matter for value judgments. Finally, an attempt will be made to evaluate these two methods as they test the underlying purpose of total communication.
SECTION III

METHOD

The ultimately possible attitudes toward life are irreconcilable.

Max Weber

Hypothesis: Qualitative and quantitative measures can be combined to provide an integrated model of change in perspectives for the study of personality theory.

Procedure: Two different methodologies will be compared in their ability to successfully integrate the two measures. Each will begin with a different set of assumptions and a hypothesis and method which follow from those assumptions.

The purpose of the procedure used in part A will be to explain changes which occur over time. The scientific assumptions underlying this method are that operational definitions and hypothetico-deductive models are valid. (Perspectives, personality theories and historical events are considered to be social facts which can be operationally defined, measured, and correlated.)

The hypothesis to be explored in this context contains two parts:

1) Over time personality theories should become more objective as interpersonal comparisons increase. (Wojciechowski, 1975)

2) This change, as an index of human development, should correlate with environmental parameters (historical events).

The initial hypothesis will be examined primarily in relation
to observational evidence. In an attempt to internally validate the proposed relationship, a model will be subsequently constructed to serve as the basis for further investigation.

Part B will begin with the philosophical assumptions of definition-al explanation and inherently individual perspective. A philo-
sophical analysis will be the primary method used in an attempt to demonstrate the need for a qualitatively different emphasis on the direction of changes in perspective from a social to an individual model. This philosophic investigation of rules rather than hypotheses will lay the groundwork for the formulation of a model which can include qualitative but not quantitative transformations.

Part A

One of the primary difficulties in historical observation research as opposed to experimental studies is that measurements need to be constructed which are not dependent on historical context and which do not change with time. According to Bergmann, who wrote "On Some Methodological Problems of Psychology," (1953),

...The concept of a historical law ... involves the dependence of the descriptive functions not only upon the values of the variables at a given time point t, but also on their values at a (finite or infinite) number of previous time points (or intervals) t1,t2 ... the term "systematic" is used to eliminate an obvious misinterpretation of the term histor-
ical ....it is not empty time per se, but rather its content, the temporal development of the process which is thoughts of as influencing the present. ...

Given a certain physical set-up, let (s) be the system needed for its description. For actual evaluation, certain measurements have to be carried out, to determine the constants and the initial values of the variables in these equations. Sometimes it is also necessary to consider effects of the measuring procedures themselves. Always, however, it is assumed that a) All the measurements necessary can be carried out "at present" and that one does not need the values of any of the variables at any time point before t, and that
b) The describing function themselves do not change their "form" with time.

To begin the quantification of theoretical knowledge, personality theories are operationally defined as being represented by articles which contain the word "theory" or "theoretical" in their titles and which appear in The Journal of Personality and Social Psychology between 1910 and 1970.

The first step in the transformation of perspectives from qualitative to quantitative information was the development of a measuring device or scale. The theoretical basis for this scale was found in Rychlak (1968). (See Appendix 1)

Actually, Rychlak did not design a scale to be used for the purpose of categorizing theories. What he did do was philosophically develop the two perspectives and list the more probable aspects of a number of issues which would relate to each in a bipolar fashion. (See list, page 137) He did not perceive his categories as absolutes, but rather as directions on a two dimensional scale. It was, therefore, a subjective redesign of his lists into a measuring scale by the researcher which provided the basis for categorization by a rater. The rationale for the design as well as the specifications are as follows.

The concern of this dissertation is with a theory of conceptual understanding which outlines or orders the relations between abstract perspectives. A scientific scale of "factual" criteria would, therefore, be an inappropriate method for communication (with measurement as transmission of information). The basis for evaluation in the philosophy of social science is justification of judgment.
There are three basic areas which must be evaluated in this manner in order to determine the placement of a theory into one category or the other. All are weighted equally for the purposes of this judgment.

The first issue is the causal or correlational issue: answering the question of how or why about personality according to a certain perspective. The second issue is conceptual, dealing with what constitutes personality of dynamics of personality (e.g. physiological base, mind, etc.). The third issue is methodological. What procedures does the theorist use to inform himself and the reader of the merits of a theory.

The three issues provide the basis for categorization. Each category contains one dimension for each issue. A category, therefore, consists of three dimensions -- one causal, one conceptual, and one methodological. This three issue system is believed to partially compensate for and broaden the impact of a forced-choice scale with a dichotomous measure. There are four categories, although in only one case was it even necessary to use the last category as a basis for decision.

Theories are rated as being dialectical or demonstrative in each of four categories on a forced choice basis. The rater continues on to the next category until he reaches a clear decision (e.g. ratings of 1-0, 2-0, 3-0, or 2-1 would all be the basis for stopping at category I). He only continues to the next category if the decision is unclear (e.g. 1-1 or 0-0 with the deciding vote being unclear or unmentioned in the article). The scale was manipulated during practice sessions with the Journal of Personality until the researcher felt
comfortable with its consistency.

A reliability check resulted in 70% agreement between raters 1 and 2 on a 20 article random sample. The differences (a total of six) presented by the second rater were divided into four categorized as dialectical which rater 1 said were demonstrative and two categorized as demonstrative which rater 1 said were dialectical. This yielded a reliability coefficient of .41 which is significant at p .10 but not at p .05.

The first rater practiced with the "firm" scale, randomly (to prevent discovering a trend to look for) in The Journal of Personality. This exercise was intended to result in an asymptote of the learning to rate curve.


Results of Ratings

According to the data, there have been continual shifts in the leading perspective of theoretical articles with no predictable periodicity. (See Table 1, Figure 3) Although the absolute number of articles rated was small, the consistency of fluctuation did not suggest that a larger N would change the pattern.

There has been an overall increase in the absolute number of articles with slight drops during the two world wars and the depression.
TABLE I
NUMBER OF THEORETICAL ARTICLES

<table>
<thead>
<tr>
<th>Year</th>
<th>Dialectic</th>
<th>Demonstrative</th>
<th>Total Theory</th>
<th>% Total Articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1910</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0.054</td>
</tr>
<tr>
<td>1912</td>
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<td>0</td>
<td>1</td>
<td>0.013</td>
</tr>
<tr>
<td>1914</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0.039</td>
</tr>
<tr>
<td>1916</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>1</td>
<td>2</td>
<td>0.042</td>
</tr>
<tr>
<td>1920</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0.046</td>
</tr>
<tr>
<td>1922</td>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1926</td>
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<td>6</td>
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</tr>
<tr>
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<td>3</td>
<td>0.036</td>
</tr>
<tr>
<td>1930</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1932</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0.044</td>
</tr>
<tr>
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<td>0.026</td>
</tr>
<tr>
<td>1936</td>
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<td>1</td>
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<td>1</td>
<td>1</td>
<td>0.017</td>
</tr>
<tr>
<td>1940</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0.010</td>
</tr>
<tr>
<td>1942</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>8</td>
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</tr>
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<td>3</td>
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<td>5</td>
<td>0.034</td>
</tr>
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<tr>
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<td>3</td>
<td>0.014</td>
</tr>
<tr>
<td>1968</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0.011</td>
</tr>
<tr>
<td>1970</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>0.027</td>
</tr>
</tbody>
</table>
FIGURE III
NUMBER OF THEORETICAL ARTICLES

1. Dialectical
2. Demonstrative
3. Total
The number of theoretical articles has also shown this overall increase but the percentage of theoretical articles has emphasized the occurrence of a somewhat different pattern than the one observed for articles. In general, the periods when the absolute number of theoretical articles rose, so did the ratio of theoretical: non-theoretical articles. (See Figure 4)

An analysis of the data at 10 year intervals shows no significant difference in occurrence for the two types of theorizing. (See Table II, Figure 5) A further statistical analysis yielded a correlation of .75 between dialectical and demonstrative articles.

**Discussion, Generalization and Deduction**

Since both dialectical and demonstrative theories prosper at the same time, it would appear that the relation is not one of cyclical alteration in perspective. The consistency of the pattern would also support the view that one paradigm is not dominant nor is one becoming dominant. Thus, the initial aspect of Wojciechowski's prediction (1975) was not supported by the evidence.

However, since the purpose of the procedure was to explain change, and changes did occur, there remains the possibility that these changes can be explained in relation to environmental parameters.

The fact that the pattern of theorizing behavior for both perspectives correlates so highly would suggest that both perspectives are qualitative representations of the same basic unit: theorizing behavior. Conceptually, for the knowledge system, perspective may be viewed as arbitrary. (One other possibility not considered here is
FIGURE IV

PERCENTAGE OF THEORY ARTICLES
TABLE II

DATA IN 10 YEAR INTERVALS

<table>
<thead>
<tr>
<th>Years</th>
<th>Dialectic</th>
<th>Demonstrative</th>
<th>Total</th>
<th>Theory</th>
<th>Total Articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1910-1918</td>
<td>5</td>
<td>3</td>
<td>8</td>
<td>291</td>
<td></td>
</tr>
<tr>
<td>1920-1928</td>
<td>7</td>
<td>4</td>
<td>11</td>
<td>371</td>
<td></td>
</tr>
<tr>
<td>1930-1938</td>
<td>2</td>
<td>6</td>
<td>8</td>
<td>340</td>
<td></td>
</tr>
<tr>
<td>1940-1948</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>408</td>
<td></td>
</tr>
<tr>
<td>1950-1958</td>
<td>12</td>
<td>11</td>
<td>23</td>
<td>544</td>
<td></td>
</tr>
<tr>
<td>1960-1968</td>
<td>9</td>
<td>7</td>
<td>16</td>
<td>921</td>
<td></td>
</tr>
</tbody>
</table>
FIGURE V

NUMBER OF THEORY ARTICLES
AT 10 YEAR INTERVALS

1. Dialectic
2. Demonstrative
3. Total
that the journal under consideration deliberately attempted to balance perspectives. Accepting the editorial comments as true, however, this would appear not to be the case.)

Information may accumulate, but perspectives change little in their internal relations; there is a constant proportion (perhaps with a slight edge towards the dialectic since theorizing is a dialectical activity) of one to another. It is possible also that as content matter becomes more specific, the explanations become more specific. Thus, what was previously explained in terms of a Zeitgeist and later in terms of schools, is not seen in terms of systems with units of analysis, or is focused on individual solidarity groups (Crane, 1972). Perspective is still not affected by this specialization which leads to accumulation.

The significant unit of measurement for the system as a whole is theorizing. The fact that the fluctuations in both types of theorizing occur at irregular intervals and are positively correlated suggests a common, external "energy" source or input. A model of this process would provide for the simultaneous growth when resources are plentiful and reduction when they are not.

If the model is perceived as a causal system, the input may be regarded as conceptual resources from the socio-cultural realm. If it is conceived as a correlational pattern, the trends can be compared to a relatively similar pattern of historical action.

The periods when theorizing reached its relative peak were 1926/28, 1950/52, 1962/64, and 1970/72. The latest set of years will not be considered because this group has not yet had a chance to repeat the pattern in ratings by dropping back to lower levels.
Absolute numbers of articles also went up in 1926/28 and 1950/52. However, the percentage of theoretical articles still increased relative to the growth.

When percentages are used rather than absolute numbers, a generation theory (Buss, 1969) would appear more likely in light of the fact that this level is reached only once every 24 years: 1926, 1950, 1974. The time span observed, however, was not long enough to predict a causal relationship of this type. In addition, this type of theory would still not explain why the "generations" of 1912 and 1936 did not fulfill the pattern with the peak in the 1960's.

The next step was to look for correlations with socio-cultural parameters which might affect the apparent generation pattern as well. Scientists and historians reviewed in section II suggested many environmental features which may correlate with the number (but not the nature) of theories. These included: war, economy, education, religion, government spending, social problems, etc. Two of the more universal variables which are not independent of each other are the state of the economy (which incorporates government spending, war, and educational structure) and the climate of the times (including socio-cultural measures such as religion, conflict, social problems, and educational function).

In the socio-cultural environment, these first three periods would appear to have two interactive features in common. These were times of relative prosperity and internal conflict in America. The mid-late twenties were characterized by pre-depression/post war prosperity as well as divisions over moral, ethical, political and social
issues. They were times of prohibition and bootlegging, heightened Klan activities and anti-immigration sentiment against non-Northern Europeans. There were labor strikes and left-wing manifestos. In the aftermath of the Teapot Dome scandal, government investigations into politicians were carried out with the accompanying publicity and conflict. The Scopes trial publicized the moral-legal conflict over the theory of evolution.

The early fifties were also characterized by relative post-war prosperity. Internally, opinion was divided over issues such as communism, McCarthyism, and loyalty. The Korean war did not unify the country; instead it split the generals from the politicians with repercussions throughout the nation. Once again there were labor strikes as workers, despite the proclaimed state of national emergency, attempted to get their share of the pie.

Federal spending in the social sciences rose tremendously in the early sixties and the nation was fairly prosperous as well. Issues causing conflict included: the Cuban missile crisis, racial tension and riots, the Berlin wall, Russian nuclear tests, the beginnings of protest over the war in South Vietnam and the ecology crisis, assassinations, social security and major industry strikes.

First, the possibility must be considered that the level of theorizing relates to a more immediate or intervening variable that is in more direct contact with both the behaviors and the social parameters. It is possible, for example, that when money is available, there is more research being done and the press of the data necessitates more theorizing.
The fact that the absolute number of articles also went up in the periods 1926/28, 1950/52, and 1962/64 fits well with a theory of a prosperity/research relation. However, cross matching this hypothesis with the graph on percentages reveals that the percentage of theorizing also went up during these years. Thus the percentage of non-theoretical articles went down. Although it is still possible that a third type of article (neither theory nor data producing) would alter the perceived relation, it would appear that it is the process of theorizing which is most directly related to the social parameter.

Another possibility is that when money is available, the press for "relevant", empirical studies is not as strong, allowing for more pure research and speculation. However, these were not the only periods of prosperity from 1910-1970. War years were also very prosperous periods when theorizing decreased. An interaction between environmental parameters would therefore appear to be a more plausible hypothesis. In the scientific tradition, however, more empirical research must be used to validate this suggestion.

**Procedure**

Once again operational definitions, hopefully free of contemporary bias, were used to measure prosperity and internal conflict.

The economy has been measured for years in terms of GNP. Although this measure is by no means a perfect representation of the relevant parametric system (especially in the 1960's when increased federal spending in education-related activities may be obscured by an overall relative lag), for the purposes of the model it was considered as a possible and adequate measure.
The climate of the times is harder to measure. There are always issues of conflict and almost any measure would have to be based on a value judgment. The behavioral measure chosen was probably not the best but it was readily available. The level of unemployment in interaction with a war/peace measure was used to identify times of internal v. external direction in interaction with the economic security to question. Additional data was collected when available on social welfare expenditures.

Government publications containing information on the GNP, unemployment and social welfare expenditures included: *Historical Statistics of the U.S.; Statistical Abstracts of the U.S. 1975;* and *Occupational Trends in the U.S.* All were published by the Bureau of the Census, Department of Commerce.

Results of Measurement

The GNP has risen rather continuously with only one major setback (the depression years) and two minor drops immediately after the major wars. Relatively, however, the greatest rises have occurred during the war years and 6 years after the wars. Once again, the 1960's were a relatively stable periods of relatively gradual increase. (See Table III)

Unemployment is a continually fluctuating phenomenon. It reaches the lowest points during the closing years of a major war (1918, 1944) and its highest levels approximately 13 years after the war. Midway between these two extremes is a relatively low level of unemployment which occurs 6-7 years after the war. The data becomes rather inconclusive during the 1960's when it is also rather
TABLE III

PARAMETRIC DATA

<table>
<thead>
<tr>
<th>Year</th>
<th>GNP</th>
<th>Unemployment</th>
<th>% GNP</th>
<th>% of Govt. Spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>1910</td>
<td>31.6</td>
<td>5.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1912</td>
<td>5.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1914</td>
<td>40.3</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1916</td>
<td>4.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1918</td>
<td>75.6</td>
<td>1.4</td>
<td></td>
<td></td>
</tr>
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<td>1920</td>
<td>88.9</td>
<td>4.0</td>
<td></td>
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<td>5.5</td>
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<td>1.9</td>
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<tr>
<td>1928</td>
<td>103.1</td>
<td>4.4</td>
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<td></td>
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<td>90.4</td>
<td>8.7</td>
<td></td>
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<td>82.7</td>
<td>16.9</td>
<td></td>
<td></td>
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<td>85.2</td>
<td>19.0</td>
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<td>1944</td>
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<td>419.2</td>
<td>4.2</td>
<td>8.6</td>
<td>32.7</td>
</tr>
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</tr>
<tr>
<td>1960</td>
<td>930.3</td>
<td>5.4</td>
<td>13.8</td>
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</tr>
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<td>977.1</td>
<td>5.4</td>
<td>15.3</td>
<td>47.8</td>
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<tr>
<td>1964</td>
<td>1158.0</td>
<td>6.0</td>
<td>17.5</td>
<td>55.8</td>
</tr>
<tr>
<td>1966</td>
<td>1397.3</td>
<td>6.1</td>
<td>18.0</td>
<td>55.8</td>
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</table>
hard to determine whether or not there was a major war being fought. The element of unified outer-direction (a common enemy) was missing according to almost every historical account, but the stimulus to employment was there. The level of unemployment was relatively static during those years from 1960-1974.

In terms of comparison between the two measures, it would appear that they are redundant and perhaps both measures of the same historical process. Since it relates, conceptually at least, more closely to professional activity, the interactive measure of war/unemployment will be retained.

In regards to the period of the 1960's, an additional measure could be evaluated which was not available for pre-World War II years. Conceptually, this step is justifiable on the grounds that almost every major historian of personality theory, psychology, and the social sciences has mentioned the changes which occurred in the discipline in the post war years. These changes were attributed to such factors as increasing professionalization, funding, recognition of the profession, and concern with scientific human relations and technological innovations.

Although this data does not become available until 1950, it does show one interesting feature. The rise in the percentages of expenditures on social welfare has not been consistent. It was at a relatively high level in 1950, dropped during the mid fifties, and began its steady increase. Thus a sense of relative prosperity in the discipline might have reoccurred in the early sixties which related to the rise in spending/recongition/employment in the social sciences specifically rather than in the country generally.
Discussion, Generalization and Deduction

Conceptually, the relationships could be perceived as follows:

1) The Economy. In times of relative prosperity, more money is available. This extra money buys time for more indirectly functional activities such as theorizing or reflecting on accumulated data, education, and social protest.

2) Climate of the Times. Increased social protest is one of the features of a general measure of internal conflict. This conflict includes divisions on issues of religious, moral, ethical, racial, ethnic, political, legal, and economic significance. The relation to theorizing is probably complex, but the essence may lie in the increased concern with questions of why rather than how.

In stable times, when the people are unified either by a common enemy or a common problem, their attention is directed towards issues of production and problem solving. Directions and purposes are clear. In times of rapid change and conflict, people become more concerned with uncertain goals and structures of government, interpersonal and legal relations. Why did this occur is a question often researched.

The impact of this Zeitgeist on the personality theorist is two-fold. Initially, as a part of the larger society, he, too, is asking himself and being asked these questions. In addition, however, the subject of his study -- the human personality -- is also transformed by these features of the environment. Plurality of environment and perspective shapes both the observer and the subject of his observation. For the psychiatrist, this means his patient
population is more likely to be troubled by issues of theoretical rather than behavioral significance. The theorist, discontent in his self-image projected onto others, also seeks for new theories to explain why.

Generalization at this point in the process takes the form of theorizing -- combining tested hypotheses into a system which can be compared to similar systems. And deduction takes the form of a model which outlines the major variables in that system.

Obviously, it would be very simple minded to conclude that the only input to the knowledge system of personality theory comes from the socio-cultural environment. However, the direct purpose of this method is to show the relation between societal parameters and theorizing about personality rather than to emphasize an understanding of relations. Therefore, although it is acknowledged that more universal and more specific levels of influence are nested within the more inclusive system, in the interests of functional simplicity, this particular model will remain conceptually closed. Its input will be solely from the socio-cultural summary variable and the feedback from the system itself. The output will be in the hands of the human gatekeepers who channel energy into and out of the system and make decisions concerning levels of input, output and feedback.
No more fiction for us; we calculate;
but that we may calculate,
we had to make fiction first.

Nietzsche

**Model Building**

There are three criteria which need to be considered in the search for a compatible model. The first is closeness of fit to the hypotheses, the second is the closeness of fit to the theory (or how well the model suits the purposes of the modeler).

The model chosen for the analogy was a social science model which incorporated the four necessary features: environmental system, feedback, control, and exchange of energy across boundaries. (See Figure 6) The following assumptions were followed:

A) Change is a natural part of the system. Although the system remains conceptually closed, the environment does not. New concepts which enter the environment in time are filtered down into the system. (This feature can be used to justify the introduction of a clip function in the post World War II years which will require a change in the form of the input to include the expenditures on social welfare.)

B) Units are replaceable. (The units are people and articles.)

C) The knowledge system is structure maintaining. There is input, output, feedback and response to stress.

D) The knowledge system is perpetual. There are inherent patterns which continually fluctuate rather than appear as cycles or recurrences.
E) The determinants of the fluctuations are not in the individuals nor in the culture but in the interaction of the processes.

The internal structure is that of academia, institutions, and psychiatric practices. The gatekeepers or controllers are the theoreticians. They channel the input into the system as both dialectical and demonstrative information depending upon their perspective. Gatekeepers are replaceable; they change with each generation.

The gatekeepers also control the output and feedback into the system. As the primary writers of theoretical articles, they publish articles for distribution into the environment. This output is partially returned to the system in the form of new students with a particular perspective, societal demands and funding. If the output is large, so is the feedback and the percentage of theoretical articles is slowed down. This feedback is combined with the input to the system (in terms of the nature of socio-cultural problems) which is channeled by the controllers.

In keeping with Dupre's (1975) analysis of information processing between levels, only the input and output to the system is measured and not the absolute amount of information contained in either the system or the larger system.

In terms of dynamics, the system represents a perpetual motion machine. It can, of course, be destroyed with incorrect input or starved by removal of the energy input. However, in the absence of any such cataclysmic event, the size of the system will remain dependent only upon the number of people forming the structure.
A = Environmental or Parametric Summary Variable

Unemployment

Wartime Process

Peacetime Process

A

Feedback of Demonstrative Data

The Prescriptive System

Demonstrative

Demands

Gatekeepers

Support

Interpretation gate (Selection of Quality of Energy)

Decision Gate (Quality of Output determined)

Dialectical

Feedback of Dialectic Theory

Demonstrative Output

Dialectical Output

Clip function to be inserted, if (A) does not reach a critical level of excitability. Program reads:

Determining variable now social welfare expenditure.

System is energy conserving -- quantity maintained over time.

Quantity is positively correlated with input and dependent on size of structure.
The internal structure of the system changes with time as it relates to another nested environment. At one time the gatekeepers may be psychiatrists, another time psychologists. The centers of control may change from institutions to academia. But these functional relations are not necessary to an explanation of this particular knowledge system which is concerned only with the fact that the structure and gatekeepers exist and not where they come from or who they are.

Basically, the model systematizes the relations between unemployment, war, and theoretical production. When there is an interaction between peacetime and relatively low unemployment, the gatekeepers transform this information into support for theorizing. When unemployment is high or conditions of war exist, production is channelled outward in more demonstrative ways and the gatekeepers respond to stress by transforming the energy input into demands for substance. Feedback into the system is continuous, but it is inseparable from the input variable at the time of entry. (i.e. gatekeepers cannot distinguish the "motive force" behind their transformations of energy into theory or demonstration.)

A representation of this model can be visualized as a modification and simplification of Easton's system and the adaptation of it proposed as one of the original hypotheses (p.122) to be rated on plausibility. (Kerlinger, 1973)

It is this form, rather than a more mathematical or less formal theory which fits the data and measures most closely. In order to introduce a clip function into the system it would merely be
necessary to write a program describing the functions relationally. The program would describe a critical level of variability or "exciteability" which must appear in the input every given number of years. If this variability did not occur, the system would switch over to determination by a more delicate or specific measure such as the percentage of expenditures on social welfare. It would switch back when the critical level of variability was obtained.

**Evaluation**

The model presented would appear to be conceptually valid both internally and externally. Since validation of historical processes is not based on experimental tests, it will be related instead to procedural measures.

Internally, the model serves not to validate a competing claim to truth but to test an underlying assumption. In this sense, the model appears to work. It demonstrates a possible relation between a socio-cultural parameter and the production of theoretical articles. In relation to Abelson's tests (1973), an alteration of the model would not easily fit the data. High unemployment does not correlate with high production of theory. The outcome variables generated by the model serve to predict only an indeterminate future since the nature of the future environment is uncertain. Lastly, a comparison over time with appropriate empirical counterparts was not feasible because there were no other publications which dealt specifically with personality theory for an equal length of time.

The internally valid model can be evaluated, however, even though external validation is unailable. In relation to the purposes
of the modeler, which are two levels down the ladder of abstraction in regards to demonstrative goals, the model can be viewed as an ordering structure which still fails to provide for prediction and control. In the absence of future parametric data, results cannot be predicted. And in the absence of dictatorial establishment of economic situations, even theoretical behavior cannot be controlled. And in a definitional sense, there was no external relation or change in percentage of perspectives which could be open to manipulation.

The evaluation remains as the modeling began -- based essentially on value judgments. The model is functional as a tool for explanation or ordering and partial communication. In addition, it fits well with the essence of the system as it is understood. It meets the two criteria for theory which are usually required in science and does not openly prevent an understanding of the philosophical relations which exist in the history of perspective in personality theory.

In other words, it attempts, insofar as it is possible, to incorporate the value judgments, which even systems theorists claim are essential to an ecological perspective on knowledge, into a scientific systems model. However, it fails to validate the original hypothesis which states that the qualitative and quantitative perspectives can be integrated. The demonstrative perspective with its operational definitions and hypothetico-deductive methods concludes, as did Wojciechowski's original theorizing (1975) with an emphasis on measurable differences in behavior and systemic correlations. The understanding of the difference between dialectic and demonstrative theorizing remains obscure.
PART B

There are times when we are like horses, we psychologists, and grow restive: we see our own shadow moving up and down before us. The psychologist has to look away from himself in order to see at all.

Nietzsche

The philosophical approach to the material will be based on definitions which contain explanations. The philosophical method will be applied to these definitions to assign relationships based on rules. Human action, the use of a perspective, will be the focal point of an image which can serve as a tool for understanding. The symbolic relations of the image will define the rules of perspective on a more fundamental level of understanding.

In this instance, the rule is not an analytic tool, but rather a judgmental device for determining consistency with a fundamental principle. The fundamental principle of human action is the assumption that human action and life are inherently time-dependent. Judgments, unlike system functions, are not reversible, although they can change with time. The rule which relates this principle to perspectives is that an individual can only look in one direction (or have one point of view) at a time. His use of perspective is, therefore, relative to position/time.

Perspectives can multiply and divide. But historically, they are traceable to either the dialectic or demonstrative philosophies interpreted by Rychlak. This is both a necessary and
sufficient condition for perception/time. As Koch (1974) pointed out, perspectives are not the sort of thing that one can fuse. They can multiply and divide. But if they are ultimately traceable to one of two opposite poles, their essences cannot be synthesized within that continuum.

This prepares the set for the introduction of an outside observer who is able to combine the perspectives of two opposing agents. However, the perspectives of this image are not the static frames which Minsky (1975) referred to nor are they units or levels of a system which can be nested within each other. They are time dependent processes. And they cannot exist in the same place at the same time. The "rule-related" necessity of this statement will be more easily conceptualized by the use of an image which describes continuous entropic motion/time rather than consistent contiguity.

The initial image to be conceptualized is that of a spherical starburst or a 3 dimensional kaleidoscope. The creator of the image must be observing this phenomenon from within the sphere. If he were to stand still, the ever changing nature of the surroundings would overwhelm him. He would become confused and unable to cope. So his own position changes relative to his perceived need for order.

Some individuals constantly change their perspective, or adapt, depending upon each situation. They have a low tolerance for the sense of displacement which results from trying to fit new visions into old judgments or they are not inclined to expend the energy necessary to make the perceptions fit. These individuals are the fad-keepers. Their perspectives are not only relative to the situations, but they are almost totally dependent upon it. Their
focus is determined by an external point rather than an internal perspective.

In order to grasp exactly what is meant by perspective within this starburst, the image must be extended a bit further. First, it must be remembered that the image described is really 4 dimensional. For purposes of simplification, the dimensions will be identified and described individually.

1. Initially, there is the agent, or observer. He is at one particular point within the starburst and he is looking in one direction. There is also an opposite direction in which he can look. These two directions lead to imaginary end points which are at opposite ends of a bifurcated perspective. (Actually all lines in the starburst extend infinitely.) In relation to personality theory, the end points represent dialectical and demonstrative perspectives. The individual who is looking in one direction perceives either more or less demonstratively depending upon his location on the continuum. (See Figure 7)

The closer he gets to the particular perspective, the narrower his focus becomes and the more unbalanced his approach. As he nears the end, he may appear to be rapidly heading for the abyss of imaginary certitude. His movement back and forth along the continuum is partially the result of a dialectical tension which exists between the agent and another person. The other person can communicate to the agent with a perspective that is either more dialectical or more demonstrative. Rules of judgment thus, continually change with time unlike "laws" which could determine perspective. They are based on fictional constructs rather than empirical evidence and thus are open
to the interactive impact of other human construct communications. By accepting this communication with his own sphere, the agent can change his position. There are an infinite number of points on any vector and through any point there passes an infinite number of lines, some closer in perspective and relation and others further apart. Any one line represents the first dimension.

2. There is a perpendicular line which passes through the agent's point on the continuum which acts as a stabilizing force, preventing him from altering his perspective every time new information enters into his sphere. This second dimensional line of belief determines the range of acceptance of alternative views. The closer the agent is to the "end point" on his continuum, the shorter the line of belief which keeps him there and the more inflexible and unstable his position. He has, in effect, less leverage. (See Figure 8) An agent who is relatively close to the center of this two dimensional circle has a longer line of belief and is thus able to accept more conflicting views. The length of this line may be determined by age, experience, or education. Its growth rate may be related to programs for incorporation.

3. The third dimension can be visualized as a circular slice of the sphere which passes through the agent's point of view and determines the range of his perspective. Once again, the agent who is relatively centered will have a larger range of perspectives in that his circular "theater" will be larger. This 3 dimensional chunk will have only perceived boundaries, but these boundaries inherently distort perception to a greater or lesser degree. The
FIGURE VII

Dialectical

Point of View

Demonstrative

FIGURE VIII

Perspective

Point of View

Line of Belief
closer one is to the circumference looking out, the greater is the relative curvature of the lens.

At this point it should be noted that the agent is always perceived as "looking" towards the shortest end of his continuum. This can be conceptualized as the basic turning outward which accompanies interpersonal communication. In order to see outside of oneself, the shortest distance (or path of least resistance) determines direction of focus. The agent who somehow confuses this direction sees too much of himself in every situation. He is, in essence, surrounded by his own importance. He recognizes that he sees more than the average man and confuses this with knowing more.

There is a fine line to be drawn between this egoist and the yogi. The yogi is centered within himself, especially when he closes his eyes. He is not only at a midpoint on one continuum, he is at the center of the sphere. Although his gaze is turned inward, because he is at the center and can see through himself, he can see in all directions alternately. In a relative sense, time has stopped for him. The sphere spins around him and the change over time is relatively slower. He is more balanced and stationary. He ages, as a learner, but more slowly than those on the periphery who are more quickly burnt out.

Some of those who exist near the circumference are narrow minded and faddish. A few, however, are extreme versions of the egoist. Their gaze is directed inwards first and their range is enormous. These are the theorists who propose global theories with any perspective. They can encompass everything either with their
reductionism or their Gestalt. Since within any man's sphere there are an infinite number of continuums, the dialectical-demonstrative bifurcation naturally only represents one set of perspectives. Thus, theories can be proposed within any number of perspectives for any number of slightly differently defined disciplines.

These theories, however, tend to display brief bursts of energy and quickly burn out. It is only those that are almost immediately adopted by increasing numbers of other people which continue to exist until the numbers are again diminished.

The most balanced, or perhaps the most confused, perspective probably belongs to the eclectic near the center of his sphere who constantly shifts his view to the opposite pole. If this is done with awareness, it can lead to a greater understanding of the relative nature of perspective. In addition, the individual whose contacts are widely varied has a greater chance of remaining near the center in his perspective since contrasting dialectical moments counteract the tendency to follow the path of least resistance.

4. The fourth dimension is perhaps the most difficult of all to visualize. It is the constant, entropic motion which persists for the human lifetime. From the first moment of awareness, or perhaps conception, the sphere grows larger as knowledge accumulates and perspective is directed outside oneself. Perspective, however, does not increase in an absolute sense. There have always been an infinite number of lines which can be drawn within the sphere and it is only the length of the perspective, the range of focus and the stability of the vertical axis which change with time. As time
continually presents a new environment and new interactions, the individual is attracted to them. His gaze shifts and he sees them in a slightly different perspective. At all times, because of the constant motion of the sphere, there is a kaleidoscopic pattern surrounding any focal point. Too much confused, blurred information can fog the vision. And too little external contact can slow growth.

There are pulsating moments of withdrawal and renewal, probably related to the life cycle, but the natural and irreversible direction of time will literally demolish the person who insists on a simple, stable order with no movement and a fixed stare. He soon becomes overwhelmed by change which is relatively greater than his new learning.

In the perspective of the larger universe, this "progress" is infinitesimal. An individual, even an individual who has expanded his sphere with the accumulated knowledge of others, is insignificant. It is only relative to other individual agents that his perspective is measurable. Even then, the measure must be relative to the motion of the agent since individuals move at different rates as well as see with different ranges. The agent is so much a part of his own motion that he sees himself change in position only relative to others also.

Groups of individuals, usually centered around (spatially) or following the lead of (temporally) one or more of these relatively larger agents can form, in a sense, a system. But this system can never be closed spatially nor confined temporally. It is therefore
not subject to the same types of "laws" which are postulated for physical systems.

In this context, however, rules relating to generations or Zeitgeists are appropriate. Age-cohort groups often share similar perspectives because they have interacted with each other and with similar environmental situations. No two agents can ever occupy the same "space" however, so views are not identical. It would not be unacceptable to view the nature of cohort changes and the analogous nature of the changes in different age groups at different times to a life cycle. This life cycle could perhaps be construed as a rotation around the third axis which can pass through the sphere at right angles to the lines of perspective and the line of belief.

An alternate view might be to conceptualize the third axis rotation as a daily occurrence which passes the individual through the phases of light (accumulation) and darkness (consolidation). During the "daylight", the perspective of the agent is turned toward the body of light (accumulated knowledge of all ages). During the night, he integrates this knowledge as his belief system axis brings energy inward for integration.

The phases of the individual's life cycle would correspond to the different points in the rotation around the larger body of "light." The entire cycle would represent one complete rotation with different individuals having cycles of different lengths.

These last two images are highly speculative and not very well developed. They represent only possible extended relations which might relate the individual to an accumulated body of knowledge. The purpose of this image is to qualitatively describe the relations of
perspectives and knowledge. Within the scope of this conceptualization, it is possible to visualize the "beginnings" of perspective in interpersonal interaction and also the time-dependent process of change which is relative to the number of acceptable encounters with other perspectives.

Such descriptions do not explain exactly how perspectives change nor of what they consist. They do help the reader to understand the form and direction of the movement. They can help one understand, for example, the difference between dialectic and sophistry. The dialectic permits the alteration in point of view through interaction. Sophistry is an internal circling back to the same point.

The model also alters the problems of the observer. No longer is he an outside agent attempting to look "objectively" at a situation. Now he can be placed inside or outside the situation and his perspective acknowledged. When the reader knows the point of view of the observer, he can conceptually adjust it towards the center where there would be a flatter lens and a "truer" perspective. The basis of the observation would still be a human judgment, but it would not differ in principle from the non-interactive observations in science where the observer still affects his observation with defining constructs.

Theories of personality or historical action could be understood in relation to the rules which governed their perception and their communication. And it is these rules which differ in principle from those of science (laws) or art (standards). Understanding the image and its role as a set of rules for perspective in social science
is, therefore, the purpose of the model. It follows that understanding rather than validation should be the criteria for evaluation. This model can be judged (as was the demonstrative model) on its ability to fulfill its own intention (understanding) and to test its own underlying assumption (perspective is determined by constantly changing relations and organization is relative to historically defined rules).

Evaluation

There are two directions from which understanding can be approached. The first is the understanding of the internal analogy in the image. This is comparable to checking for internal validity. The second approach, one of justification, evaluates the model as it fits with the overall character of the social sciences.

1. This philosophical method of "systematizing" historical action is to study the rules and relations which are applied in a process. The process under investigation is the acquisition and use of perspective in the study of personality theory.

The relations are based on rules but not necessarily rules of logic. The principle relations which are covered by the image are the ones between perception, perspective, and environmental interactions (temporal, interpersonal and situational). These relations encompass all the previously mentioned factors which are needed to understand human action and knowledge.

The rules for relationship are contained in a general principle which remains in contrast to the explanation of perspective within a systems theory. This principle is that time is a one-directional, uncontrollable event which cannot be eliminated or programmed
(e.g. for prediction). Derived rules, which are applied in the
relations of the image, include inherent relativity and an indi-
viduality which accounts for both interaction and change.

The understanding of perspective contained in the image is that
of a dialectical process which forms and reforms point of view. A
demonstration or event can change the point of focus and as it is
incorporated, enlarge the sphere of knowledge. Only a dialectical
interaction (whether internal or external) can change perspective,
however. And in the social sciences, it is perspective which shapes
theory and demonstration.

2. The image justifies perspective in the social sciences as
an essential concept. It incorporates the concept that perspective
rather than history repeats itself with slight variations. The
pattern or rules which don't change are those which relate to
definitional perspective rather than those which relate to situa-
tional production (as laws in general systems theory). These
statements in no way imply that there is no such thing as quanti-
tative history, or even a systematic method for approaching it.
Instead, what the image does is to fit in with the philosophical
view that the social sciences, being inherently judgmental, should
be based on understanding rather than explanation.

Understanding is not non-functional in this view. Instead,
it is the essence of this judgmental discipline. And since these
judgments are individually relative, cognition can be construed as
neither molar nor molecular. Instead it must be identified and
measured in perspective.

This view neither refutes nor supports the commonly held
paradigms governing the growth of knowledge in either science or art. It is possible that in science, knowledge can be reduced to the accumulation and production of data. And in the arts, the gestalt or universal may be construed as ultimate knowledge. But in the social sciences, a theory of knowledge must begin with perspective. Perspective is based on dialectic interchange but focused on external events. The purposes of the discipline would be well served by an acknowledgment of the fundamental nature of perspective.

Perspective is an essential element of the content in social science. It contributes not only to understanding and explanation, but also to the basis of the reader's evaluation in a comparison of views. And it is the storyteller, whether he is a disguised B.F. Skinner in Walden II, an Indian reconstructing his heritage, a black militant in a semi-fictional autobiography, or a Freudian therapist writing a case history of a historical figure, who can most realistically combine all three elements into an integrated form of communication. It is also essential that this storyteller include a balanced portrayal of events, relations, and evaluations of perspective in order that his portrayal be considered social science rather than a fictional (or symbolic) fairy tale construction.

Storytellers have most often been criticized for the non-artistic quality of their work. Events which do not contribute to the central plot are freely included in order to elaborate on the description of a character or a situation. Characters are included which do not focus on a central theme and who relieve tension rather than build momentum. Images are sometimes transposed
without a reason given for the inconsistency. Contradiction is accepted as a part of life rather than rejected or excluded as an incompatible pattern for a system or a work of art.

And it is in just these ways that storytelling more closely resembles social science than art. The core of both representations is an integration of idiographic and nomothetic features of real life within a particular perspective. The applied social sciences attempt to resolve both universal problems such as prejudice and individual incompatibilities such as schizophrenia.

Historical representations, especially, cannot remain within the context of the social sciences unless it is acknowledged that the central element of any image is the people and both the real "measurable" phenomena and the fictional constructs on which they based their actions. For unlike the history of a river which can be described in terms of systemic variables which cause it to flow to the sea, the history of a man or a group of men can be understood only in terms of purposive actions. These actions are not independent results of fictional constructs; they are an essential part of the construct system. In fact, they cannot be said to exist independent of someone's construction of them. An explosion which kills a man is not an act of war unless someone construes it that way. And an explanation of the system, including the pattern of behaviors leading up to the explosion, will not suffice to define the act independent of the intention. Nor will an understanding of the situation (as a state of war) independent of the perspective of both the agent and the observer, provide a basis for
an evaluation of the reasons and judgments by the reader. The agent may have accidentally set off the explosion during the war or the observer may be misconstruing a violent game as a war.

Thus, both perspectives which were used as models for historical investigation in this section are inherently inadequate for a total communication. The demonstrative perspective, which operated on the basis of causal laws and operational definitions, could only fulfill the purposes of functional ordering and partial communication by analysis and modeling. The dialectic perspective, which followed rules of relation and intentional definitions, led to understanding which did not contain useful explanation and a communication based on selection and imagery. In each instance, only the perspective which defined assumptions was primary and the purposes of other assumptions could not be integrated on an equal basis.

The two perspectives remained unified only on the one area where they had originally interacted: contingency. Since they could not be synthesized on the basis of this intersection, a deeper look into the nature of the interaction may reveal a hidden perspective which acts as a complement rather than a synthesis. If the two combined do not account for an adequate representation of a social process, perhaps the area which they both agree on holds the key or the emergent answer.

This emergent is not equivalent to the rule-directed dialectic synthesis of philosophical inquiry. Rather, it is the "result" which is an essential part of the intentional integration of explanation and understanding in order to communicate a social scientific
representation of life. The key element in this particular alternative perspective is contingency, which contains followability as an essential element.

Followability, in turn, can be interpreted as a primary component of responsible communication in the social sciences. Since control of the biosphere or total understanding do not provide a description of the complete purpose or intent of social scientific theorizing, and since only one primary perspective can be functional at a time, the emphasis in social science, as a discreet but interactive area of knowledge, is on communication, the third purpose.
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CONCLUSION

Every theory of the course of events in nature is necessarily based on some process of simplification and is to some extent, therefore, a fairy tale.

Sir Napier Shaw

This conclusion will not be a summary of events which have already occurred. They speak for themselves. They will not disappear but will provide only a background of comparison for this section.

The conclusion will present an alternative to both methods. This synthesis was not specifically designed to suit the purposes of the social sciences, but the fit is good. It is this final fit which will be subject to evaluation and comment in the context of a new thesis.

The concept of a synthesis is not the best one for this type of conclusion. There is no true coming together in the Platonic sense of the term. Plato's organization would include a unit derived from the doctrine of ideas (as thesis in philosophy), from the existential estrangement of analysis (as antithesis in science), and a reunification in synthesis.

However, his synthesis would also just be a dialectical moment. And much as the dialectic is valued as a method for acquiring knowledge, it is not as functional as a method for communication. And, in fact, the Socratic dialectic did not have communication as its major goal. Understanding was its purpose just as explanation was the purpose of demonstration.
In order to capture the best of both worlds, a separate theory of communication (not merely a combination of the elements of communication in each), must be developed. The theory must capture the essence of ordering and understanding but include as well elements which suit the purposes of communication. In the social sciences, this list would consist of such essentials as interesting content, followability, human relevance, interpretability, and continuity. In essence, it would provide a complementary perspective to that offered by the interactive application of scientific and philosophical methods.

Helson (1972) presented a list of goals for communication in the history of psychology. These goals describe the purpose of historical theory for psychology. The list includes: an awareness of the driving power of ideas, concepts, and theories; the knowledge that the scientific enterprise is continuous and great minds can be met in literature as well as in person; recognition and rejection of shibboleths; learning how mistakes were made in the past so they can be avoided in the present; an introduction to fresh examples, demonstrations or illustrations; pleasure from reading science with the poetry and beauty left in; an acceptance of the general rule that success does not come quickly and that even the most fruitful ideas have to fight their way into the scientific establishment.

Helson suggested four lessons to be learned from the study of the history of ideas in general. They are: a) The most influential ideas have at first been considered revolutionary. Although they have solid bases, they require the courage of conviction to stand by the
full implications. b) Viable theories are usually relatively simple (e.g. evolution, relativity, conditioning, association, Gestalt). c) Important theories are general and have a wider applicability than their original intended scope. d) Great ideas are operational.

Friedrichs (1970) took the lessons to be learned a step further to their ultimate purpose. He described in detail the concept of responsibility as it relates to the social scientist. Developing to its contemporary "endpoint" the interaction between social scientists and their subject population, he described the problems which result both physically and mentally when conflicting or dogmatic scientific or philosophical prescriptions are imposed on human action. Other sociologists of knowledge have agreed that concepts such as alienation, atomization and functionality filter down into the thought processes which govern ordinary thinking and project planning. Optimization (which is always selective and judgmental) is considered an end in itself as are other abstractions.

In applying and communicating his theories, the social scientist can contribute to irresponsibility if he considers his work either value-free or for the good of the people, simple or all-inclusive, a worthwhile contribution or sufficient justification. He must provide for critical evaluation of his theory by laying open the assumptions, purposes, and essentially contested concepts which guided his theorizing. Also, the theorist must not simply fill the role of technician or ivory tower consumer. His professional responsibility is to provide people and students with a method and a framework for
evaluating human action.

The abstract concept of professional responsibility has been adulterated in some instances and used to refer to a semi-rigid set of guidelines for behavior. They are usually described in a list of things which should not be done (e.g. reveal a patient’s confidence, lie to a subject in a way that might lead to emotional or physical damage, plagiarize, hurt a subject, etc.). If positive goals are included, they usually have either legal or moral overtones (e.g. the fulfilling of contracts or obligations of funding, "helping" or correcting).

For the theorist, especially the personality theorist, the concept of responsibility has been particularly confusing. If he works within the framework of describing healthy or abnormal personalities, his contributions are dominated by an essentially moral perspective. If he works with processes and behaviors without mentioning value judgments, his work is either governed by hidden perspectives or tautology. Responsibility in personality theory without the promise of helping or explaining becomes an even more abstract concept.

Understanding can provide a hint of relief. But, taken alone, understanding is a hollow term which implies finality. Is the ultimate purpose of the personality theorist to put man’s curiosity about his fellow man to rest? The prospect is a frightening homeostatic system or an equally unappealing universal awareness.

The alternative to this passivity or balance could be located in the inherently dialectical nature of ideas which is tied to the
continuous nature of time. The responsibility of the personality theorist -- or any theorist -- would be to pass along this inspirational quality of ideas by integrating reason into contemporary methods and contents.

The heuristic value of theories would be the primary measure of their worth for the theorist. It would be his responsibility to inspire as he had been inspired by theories and ideas in the past. Whereas others produce for trade-value, perhaps the inspirational theorists have, in a Freudian sense, internalized this process. They do not measure their theories by material rewards or status and prizes for production. They are self-motivated and self-rewarding. They work under the internal motivation of inspiration and their responsibility is actually just to share with others the essence of this process.

Although the essence of professional responsibility in the sciences may be contained in an ecological proposal for production/consumption/progress ratios, in the social sciences the theorist's responsibility goes even further. A fuller life does consist merely of more information. The social scientist must include meaning into the process -- reason for theorizing over and above the desire to control.

In many cases, meaning is difficult to extract or exclude from either the scientific or the philosophical model. Meaning, however, can be encompasses by the less abstract concept of communication and given form in a story. The element of story was described in detail by W.B. Gallie (1968). Stories characterize what is essential
to the communication of historical understanding, explanation and inspiration, according to Gallie. Stories have meaning for both author and reader. They are written with perspective and intention; they are focused on a conclusion.

A story describes a sequence of actions and experiences of real or imaginary people. Characters respond to events and to each other and their actions are centered around situations. Predicaments arise from these situations which require thought or action from the main characters. This response leads to a climax and conclusion.

Following a story at one level is understanding the words and their order. At the more important level, however, it means to understand in a manner which pulls one forward. There is no need to explain or articulate the reasons for involvement. It is analogous to a real life drama where one can be drawn into a situation which has meaning. One recognizes the urge to follow the sirens, hear about a friend's affair, learn of an interesting character's triumph over adversity. Not only does one find these stories easy to follow, but one also feels compelled to follow them, even if the conclusion is known beforehand.

This conclusion, whether known or not, is not analogous to either the scientific proof or the logical deduction. The conclusion does not necessarily follow from the rules or facts of a story. More likely than not, it is only one of several possible outcomes which could conceivably have arisen from the facts, rules, and contingencies that were created. It is the contingencies or surprises which contain the essence of the story -- not the moral
lesson nor a predictable outcome.

Thus, people are evaluated in their ability to follow stories not by their ability to guess conclusions or extract judgmental comparisons but by their ability to identify, understand and appreciate the nature of unexperienced situations and unknown characters. This ability does not preclude judgments or presentiment about conclusions. Understanding many levels of a story is merely the essential characteristic of a good historian (whether of history or personality).

The many levels on which a story can be understood are part of the overall design for a story. This design is based on a pattern which calls for a beginning, middle, and end. Superimposing this pattern on the design is a process of events of recognition rather than a process of following laws or rules. However, the design contains structures which resemble scientific explanations as well as philosophical rules.

Ideally, the story should be self-explanatory. And if it is simple enough, it will usually be clear. The flood which is caused by a broken dam or the death which is caused by disease are both events which are governed by scientific logic.

Rules of philosophy are also part of the story. They are applied to the organization and to the relations which exist between events and individuals. The rules are all followable but they are not all rules of finality. Many times the rules govern the co-existence of alternative possibilities. If the character risks his reputation to prove a point, he could either fail or succeed.

The events which are governed by neither the rules of science
nor philosophy are those which add to the texture of the story --
the third dimension. Intelligibility of the contingencies is what
identifies the story as a parallel to everyday life. The under-
standing of accidents, mistakes, good luck, and random occurrences
is what removes the story from the sphere of either science or
philosophy.

Gallie modified Wittgenstein's comparison of life to a game. He
believed that it is the playing of the game rather than a knowledge
of the rules which provides the interest in and intelligibility of
human action. If the purpose of game playing was primarily func-
tional or rule-related, the observer could just as easily read an
account of the plays and the outcome in the paper. Instead, following
a game is "a teleologically guided form of attention" which is
pulled toward an open-ended conclusion (which can be neither
systematically nor logically deduced).

Although understanding the rules adds to the understanding of
the game, it is not a necessary part of following the action.
It is only necessary that one understand the concepts involved and
sense the point of the action. For the story, these are the elements
of theme and plot (leading to a conclusion). They connect individual
actions not in a Gestalt nor a system, but with a thread of unity.

The comparison to real life is contained as well in this continui-
ty without universality. The crucial human element is still con-
tained in this perspective. It cannot encompass all but it can
follow related events to a focal point over time.

Other elements which are part of a story (besides theme, plot,
and human perspective) include: routing developments, major and minor characters, dialogue, judgments, background, environment, situations, and events. Facts and numbers can be included insofar as they relate to the conclusion; they are treated as evidence rather than proof.

The essential element of the story is contingency. In philosophy and science, contingencies are not intellectually acceptable; they represent uncontrolled events which can neither be explained nor predicted in the present. But for a story, it is important not that these events are accepted as they occur, but that they are accepted after all. Contingencies understandable as luck, discontinuity in character, and mistakes add to insight even in the absence of judgmental comment.

Contingencies such as these are the material of life. They cannot be observed from without nor explained from within. Instead, the narrative form of history represents life complete with observation, explanation, relation and contingency. Historical representation does not control time; it merely allows one to look back on it again and again for deeper understanding. This understanding must be accompanied with the awareness that both telling and reading are done within a particular perspective which is shaped by a particular focal point or conclusion.

Not all knowledge of the past is history, nor is all history contained within a single contribution or lesson. There is a context for each history, but the same story can be told by many different readers each with a slightly different perspective.
So, too, can the history of a person, or a personality theory, be told and followed in many different ways. Just as history is the story of people in interaction with other people and their environments, personality theory can be the story of real or imaginary people in interaction and the history of personality theory can be a story within a story. This dissertation can be the third or fourth mirror in the chain of understanding.

For the story still moves in the direction of intelligibility. And this intelligibility comes from giving history meaning by relating it to a present event. The events which occurred in the dissertation were a conflict between two sets of assumptions and purposes, an interactive evaluation of their respective backgrounds and applications, a test of a compromise between them and the emergence of a complementary theory.

This complementary theory can be critically evaluated within its historical context by assessing how well it fits the assumptions and purposes which were defined in the introduction as essential to a theory of knowledge for social science. According to assumption number one, the essential property of any human action is its intended goal. In the context of a narrative description, the goal is not an independently defined state but understood to be an integral part of the story. Assumption number two is that perceived meaning is relative to the history of both the recorder and the evaluator. Stories seldom make any claims to independent truthfulness and the perspective of the narrator is an assumed characteristic of the method of organization. Third is the assumption that the non-universal
aspect of perspective provides the impetus for emergents. A story is followable communication not when the reader knows what is coming next but when the narrator perceives and reports some contingent event.

In meeting these three assumptions, the narrative has also met the three intended purposes of the theory. Information is ordered purposefully, understanding of the content is an essential part of the process, and communication follows naturally. All that remains is the assessment of the perspective of the author of the complementary theory. Naturally, the assumptions and purposes of the theory shaped the construction of the hypotheses and the applications and ultimately, the result. The meaningfulness of the procedure can be ascertained only relative to the intention of the historian. In this particular case, the intended perspective was one which would outline a theory of responsible communication for the purpose of instruction in the social sciences. Whether or not this intention is evaluated as sufficient justification for the methods, or whether or not this intention is judged as being a "result" of the procedure, is the perception which is relative to the history of the reader-evaluator and dependent upon his set of evaluating constructs.
APPENDIX I

MEASUREMENT SCALE

Rules: Rate by category (Roman numberal) on a forced choice basis (1 or 2) until there is a clear decision within a category (1-0, 2-0, 3-0, 2-1). Only go on to the next category if the decision is unclear.

A. Causal Issue  B. Conceptual issue  C. Methodological Issue

<table>
<thead>
<tr>
<th>Category</th>
<th>Dialectical</th>
<th>Demonstrative</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.</td>
<td>Formal or Final Cause (Mind)</td>
<td>A. Efficient or Material Cause (Body)</td>
</tr>
<tr>
<td>B.</td>
<td>Dualistic or Pluralistic</td>
<td>B. Monistic</td>
</tr>
<tr>
<td>C.</td>
<td>Subjective/Introspection</td>
<td>C. Objective/Extrospection</td>
</tr>
<tr>
<td>II.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.</td>
<td>Functional causation</td>
<td>A. Compelling Causation</td>
</tr>
<tr>
<td>B.</td>
<td>Humanistic; ideographic; anthropomorphic</td>
<td>B. Mechanistic, nomothetic; natural science</td>
</tr>
<tr>
<td>C.</td>
<td>Hypothetical constructs; cognitive method (procedural evidence); R-R laws (research)</td>
<td>C. Intervening variables; behavior; research method (validating evidence) S-R laws (experimenting)</td>
</tr>
<tr>
<td>III.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.</td>
<td>Knowing hedonism; teleology with man (purposiveness;intention)</td>
<td>A. Unknowing hedonism; teleology in science; (adaptive systemic mechanism)</td>
</tr>
<tr>
<td>B.</td>
<td>Behavior is active, stimulating</td>
<td>B. Behavior is passive, responding</td>
</tr>
<tr>
<td>C.</td>
<td>Logical probability</td>
<td>C. Statistical probability</td>
</tr>
<tr>
<td>IV.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.</td>
<td>Contradiction accepted</td>
<td>A. Law of contradiction accepted</td>
</tr>
<tr>
<td>B.</td>
<td>Creativity; purity; sponteneity</td>
<td>B. Communicability, clarity defineability</td>
</tr>
<tr>
<td>C.</td>
<td>Connotation</td>
<td>C. Denotation</td>
</tr>
</tbody>
</table>

See Rychlak (1968) for explanation of concepts.
NOTES

1
Menard, 1971, p.86.
2
3
4
Berrien, 1968, p.32.
5
Berrien, 1968, p.87.
6
The physician as medical "artist" will not be dealt with here even when, as a psychiatrist, he is stimulated to incorporate universal symbolic and mythical referents into his personality theory. These are generally regarded as expressions rather than perspectives or thought content.
7
8
9
10
Winch, 1967, p.32.
11
12
13
14
15
Rychlak, 1968, p.287.
16
17
Systems analysis retains an elevated status because of its commonly uninterpretable language. In this way it is similar to religious sermons in Latin and medical terminology. The magic is in the language rather than the content.
18
He also found the common assertion that the social sciences are awaiting their Galileo as an inadequate excuse for non or dysfunctional data collecting.
19
20
In an imaginary contrast to the mechanistic billiard balls, Ball presented a model of melting wax. Had knowledge developed under that philosophical legacy "the world would have appeared to us as a series of simmerings, drippings, meltings, and splashes, and our early studies in physics would have been mainly of things plastic and liquecent."

Behaviors can be altered without being understood, but this is technology. And technology without acknowledging theory not only has the ethical problems cited by Louch (1966) but also suffers from stagnation and dependence on theories and perspectives with which it doesn't consciously interact.
Friedrichs, 1970, p.185.
Stehr, 1975, p.176.
Stehr, 1975, p.182.
Iberall, 1974, p.204.
Parsons, 1973, p.32.
Watson, 1963, p.132
Diamond, 1974, p.v.
Sahakian, 1975, p.xviii.
Henle and Sullivan, 1974, p.45.
Rychlak, 1969, p.255.
69 Mora and Brand, 1970a, p.231.
70 Mora and Brand, 1970a, p.238.
71 Mora and Brand, 1970a, p.239.
72 Feigl and Brodbeck, 1953, p.633.
73 Although the ideas presented here are primarily Gallie's (1968), additional comments which go along with his premise have been included without notation.
BIBLIOGRAPHY


Heidbreder, E. *Seven Psychologies.* New York: Century, 1933.


---. "Why Did Their Precursors Fail and the Gestalt Psychologists Succeed?" *American Psychologist.*


Houst, 1968.

Louch, A.R. *Explanation and Human Action*. Los Angelos, Calif:

Mackenzie, Brian D and Mackenzie, S. Lynne. "The Case for a Revised
Systematic Approach to the History of Psychology." *Journal of
pp. 324-347.

Maddi, Salvatore R. *Personality Theories: A Comparative Analysis.


Meadows, Dennis L.; Meadows, Donella H., Randess, Jorgen, and

Menard, Henry W. *Science: Growth and Change*. Cambridge, Mass:

Miller, Eugene F. "Hume's Contribution to Behavioral Science." *Journal of the History of the Behavioral Sciences*. April,

Moore, Barrington Jr. "Influence of Political Creeds on the
pp. 146-148.

Mora, G. and Brand, J. *Psychiatry and Its History: Methodological

Moscovici, Serge, Ed. *The Psychosociology of Language*. Chicago,

Murphy, Gardner and Kovach, Joseph. *Historical Introduction to

Nordby, Vernon J. and Hall, Calvin S. *A Guide to Psychologists and

Parsons, Talcott. *The System of Modern Societies*. Englewood Cliffs,

Parsons, Talcott and Platt, Gerald M. *The American University.


Wolman, Benjamin B. Toward A Science of Psychological Science.