

THE INTERBEHAVIORIST

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THE INTERBEHAVIORIST

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THE INTERBEHAVIORIST publishes news, information, discussion, journal and book notes, book reviews, comments, and brief articles pertaining to interbehavioral psychology — a contextualistic, integrated-field approach to the natural science of behavior.

The newsletter also publishes professional communications that fall between informal correspondence and colloquia, and formal archival publication. As such, the newsletter supplements contemporary journals dedicated to basic and applied research, to the history and philosophy of the behavioral sciences, and to professional issues in the field. The newsletter strongly encourages submission of notes about current professional activities of its subscribers, news and observations about interbehavioral psychology and related perspectives, comments on journal articles and books of interest, more extended book reviews, and brief articles. All submissions should be sent in duplicate hard copy and a single computer disk copy (any major word processor; any Mac or IBM disk format) to the editor and should conform to the style described in the Publication Manual of the American Psychological Association (3rd edition).

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Call for News

THE INTERBEHAVIORIST publishes news about subscribers' activities and information about others' activities that may be of interest to readers. If you have published an article, chapter, or book with an interbehavioral orientation, or have read one published by someone else, particularly if the source is obscure, please let us know about it.

The Agora

Editorial

Volume 19 is complete with this issue. We plan to publish three issues of Volume 20 in 1992. The first issue of Volume 20 is due to arrive before the ABA convention in May. In previous years, we have constructed a list of interbehavioral papers from the ABA program in the May issue, always with more than a little uncertainty about our selections. If you wish to be sure your paper is (or is not) included, please let us know as soon as possible.

This issue of *THE INTERBEHAVIORIST* features a new category, "Reports," in which we intend to highlight interbehavioral work of an empirical sort. While, empirical works have always been welcome as articles in the newsletter, we haven't explicitly encouraged less formal discussions of what might better be called "empirical news." We are interested in hearing about works in progress, research ideas and problems, methodological issues, grants funded, and other items of this general sort. We have described some of our own work as an example of the sort of news that is suitable for the "Reports" section of the newsletter, although we do not mean by this example to discourage other kinds of materials or expressions. We welcome your news.

Conferences Held

First International Congress on Interbehavioral Psychology

University of Guadalajara, Mexico

February 24-26, 1992

Organizer: Emilio Ribes

Several members of The Interbehaviorist Advisory Board and a number of subscribers to *THE INTERBEHAVIORIST* recently attended the *First International Congress on Interbehaviorism* in Mexico. The conference was held at a lovely villa near Guadalajara, with approximately 50 people in attendance. The conference featured 30 papers by scholars from Universities in Guadalajara, Mexico City, and Chihuahua in Mexico, Barcelona, Seville and Madrid in Spain, and from the Universities of Arizona, Kansas, Auburn, Nevada and Tennessee-Knoxville in the United States. The papers addressed a variety of topics, among which methodological issues and philosophical considerations figured prominently. Applications of interbehavioral theory to societal problems

and the problems of special populations, including mentally retarded persons and conduct disordered children, made up a substantial portion of the program. A number of papers also addressed issues of complex responding of animals and humans, including conditional discrimination, relational responding, and language. Selected papers will be edited by Emilio Ribes and Linda Hayes for a Spanish volume to be published by Trillas Press of Mexico City, Mexico, and an English volume to be published by CONTEXT PRESS of Reno, Nevada.

(Editor's note: In my experience, behavior scientists in Mexico are more familiar with the work of J. R. Kantor and are more often interbehaviorally oriented than are their counterparts in the United States and Canada. Interbehaviorists interested in making contact with this community of like minded scholars are encouraged to attend the International Meeting on Behaviorism and the Sciences of Behavior to be held in Guadalajara in October of this year. The deadline for paper submissions is May 1, 1992. Information about the meeting may be obtained from Peter Harzem, Psychology Department, Auburn University, Auburn, Alabama.)

The Nevada Conference on the Varieties of Scientific Contextualism

Reno, Nevada

January 3-5, 1992

Organizers: Steve Hayes, Linda Hayes, Hayne Reese, and Ted Sarbin.

The Nevada Conference on the Varieties of Scientific Contextualism was not a conference on interbehaviorism. Nonetheless, several interbehaviorists participated in the program and several attended as members of the audience, finding themselves in sympathy with some portion at least of what goes by the name of contextualism. The talks covered a broad range of topics from an equally broad range of theoretical, if not philosophical, perspectives. What follows is a brief synopsis constructed from notes taken during the meeting, not from a careful reading of the manuscripts submitted by the participants. They are included here with apologies for any misunderstandings or misrepresentations. (The manuscripts are currently under preparation as chapters of an edited volume for those inclined to study them in more detail.)

The four organizers' addresses showed almost no overlap. Ted Sarbin, of the University of California-Santa Cruz, argued that the root metaphor of contextualism, the "historical act," was usefully interpreted as the narrative, and went on to consider the implications of this interpretation for ordinary science. Steve Hayes focused not so much on the root metaphor of contextualism to make his case, but on the truth criterion of the position instead. He argued that successful working as a truth criterion could not be evaluated as having been demonstrated unless the goals to which one's works were directed were stated in advance of the work. Linda Hayes took the position that it was not possible to evaluate the truth of a proposition if one's truth criterion were either correspondence based or based on successful working, and that it matter not if one's goals were stated at the outset in the latter case. Her arguments had to do with the nature and role of language in human affairs. Hayne Reese, of West Virginia University, laid out the similarities and differences between contextualism and dialectical materialism.

Michael Chandler, of the University of British Columbia, compared contextualism to post modernism, implying that just as post modernism may be understood as a phase of modernism; contextualism might be understood as a phase of organicism. Michael was the only self-proclaimed organicist in the group.

Jim Mancuso, of SUNY-Albany, made a case for the personal construct system – or what might be interpreted interbehaviorally as reactional biography – as the relevant context for an individual's action, and in doing so found himself in conflict with the radical behaviorists in the group. For their part, the radical behaviorists, among whom may be included Mike Dougher of the University of New Mexico and Tony Biglan of the Oregon Research Institute, gave two of the more concrete papers of the program. Dougher focused on interpretive and hermeneutic research methods in the analysis of verbal behavior, arguing that these methods might prove useful in

identifying the conditions that give rise to knowledge claims – an empirical epistemology of sorts. Biglan talked about community interventions from a contextualistic perspective.

Taking a rather different political perspective on the social environment, and on the meaning of contextualism, was Carl Ratner of Humboldt State University. Carl's argument was that psychological events were determined by the socio-economic system of the actor.

Ed Morris and Emilio Ribes both addressed themselves to the position of behavior analysis or radical behaviorism. Ed argued that behavior analysis considered itself a natural science on the grounds that it had selected not the individual as its subject matter, but rather spatially unrestricted behavior; and was interested in the development of principles of behavior (i.e., process), not an understanding of particular types of behavior (i.e., content.) Emilio Ribes gave what seemed to be two papers: one a discussion of logical insufficiencies in radical behavioral theory, and the other a discussion of language as human action, in keeping with Wittgenstein's idea of language games. His arguments with respect to language were of particular interest to interbehaviorists in that they gave new significance to the interbehavioral concept of media of contact. Human conduct, he argued, was always linguistic in function, though not always linguistic in morphology.

Finally, Karl Schiebe, of Wesleyan University, gave a very poetic address entitled "Getting serious about context" in which he asked why some forms of activity were considered to be serious, others not.

At the closing, the participants considered what had been accomplished by the group during their days together and what remained to be resolved about contextualism, its nature and allies. The full papers, as mentioned above, along with brief comments by the discussants for those papers, and some of these closing remarks will be the text of the volume due to be published by CONTEXT PRESS this year.

Article

Some Possible Allies of Interbehaviorism

Noel W. Smith

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Interbehavioral psychology has always taken a strong departure from traditional approaches to psychology, namely those that are dualistic, mentalistic, or reductionistic—the three being interdependent. In taking this departure it has staked out its own position and contrasted it with mentalism and mechanism. This has helped to keep its position clear, but has not provided it with many friends. I doubt whether any of us who claim to be interbehaviorists would wish to obliterate these distinctions and team up with incompatible systems, but it may be instructive to examine positions or systems that have some important similarities with interbehaviorism and whose differences may be primarily those of emphasis rather than incompatibility. At the same time we should not overlook any actual incompatibilities that do exist or the uniqueness that is interbehaviorism. I propose to examine five systems or approaches: behavior analysis, dialectical psychology, phenomenological psychology, and contextual psychology.

Those who are here at this annual meeting of the Association for Behavior Analysis will already know about that system and so I will keep my comments brief. Both interbehaviorism and behavior analysis emphasized that all inquiry must begin with observation; and constructs must be drawn from these observations, not imposed on them from traditional sources. Behavior analysis emphasizes the reinforcement principle as central to its system and in so doing seems to put more emphasis on the organism and a determining role for biology than does interbehaviorism. The latter's emphasis is on a field of interaction of which one component is the organism. Despite this difference, there is much similarity in the philosophy of science of the two.

Dialectic Psychology

With dialectic psychology one has to be quite selective because some of those who advance this position are distinctly mentalistic. Riegel (1976)

provides the most favorable model. Riegel attacks static things, categories, and entities such as intelligence and traits. He insists that humans continually act upon and change the world and in turn are changed by it. Behavior occurs in a continuous manner rather than in discrete units. It occurs in context and is historically developed. Human dialectics are not organism centered but interactive, reciprocal relationships between humans and the world. Equilibrium and stability are only temporary conditions that result from the resolution of contradictions and lead in turn to further contradictions. His manifesto is a call to arms: "Dialectical psychologists unite! You have nothing to lose but the respect of vulgar mechanists and pretentious mentalists; you will win a world, a changing world created by ever changing human beings" (pp. 164-165). (Unfortunately, Riegel died while still in his prime.)

Another exponent of dialectical psychology, Ratner (1971), describes an outlook that sounds even closer to that of interbehaviorism: "...we would say that the individual and the world do not exist in-themselves or one in the other, but are intertwined in an individual-world field that comprises their unity. Within this gestalt, various aspects (e.g., individual, world) may be distinguished, but they are always parts of the field and refer to it for their identity" (p. 85).

A major postulate of generic dialectics is that everything is in opposition or conflict. The resolution of a conflict leads to a new conflict. An antithesis arises out of each new synthesis. I suspect that most interbehaviorists would prefer to describe the nature of the world by means of observation rather than by postulation of various conflicts. I also suspect that they would not conceive of interactions as necessarily in conflict. Still, it is not clear that the resulting description of, say, a child's language interaction with its mother (Riegel calls it a "dialogic interaction") would be very different from an interbehavioral description of interaction.

Dialectical psychology has been rather prominent in Scandinavian countries (Dreier & Kvale, 1984). Its contributions have been diverse, but it has especially emphasized qualitative studies in natural contexts rather than laboratory experiments with qualitative analyses.

Phenomenological Psychology

Phenomenological philosophy springing from the work of Husserl and further developed or modified by Heidegger has become very prominent in Europe and received much attention here as well. Phenomenological psychology has developed out of it, especially under the hand of the novelist and playwright, Jean-Paul Sartre (1939/1965, 1956), and the academic psychologist Maurice Merleau-Ponty (1942/1965, 1945/1962), who were colleagues at the Sorbonne. Of the two, Merleau-Ponty's work is the most directly appropriate to academic psychology, but Sartre made a useful contribution. This system I will call French phenomenological psychology to distinguish it from the writings of Rogers, May, MacCleod, and a few other Americans whose psychology, from the point of view of the French phenomenological psychologists, is little more than mentalism with a phenomenological overlay. The French approach is sometimes also called radical phenomenology. The *Encyclopedia of Philosophy* (1967) states that "Merleau-Ponty has interpreted the notion of phenomenology in a sense rather different from that subscribed to wholly or partly by members of the phenomenological movement, as well as from that used by either Heidegger or Sartre" (p. 150). It concludes that Heidegger, Sartre, and Merleau-Ponty belong to a different school from that of Husserl and his followers.

The French system has a number of interesting similarities with interbehaviorism, and for that reason I want to dwell on it a little more than some of the other systems outlined here and to include some doubt that I have about it. I should point out at the outset that these writers are very difficult to understand, and I am not sure that I have always understood them. Someone has said that those who believe that they have understood the phenomenologists have almost surely misunderstood them.

A major point of interest is that Merleau-Ponty and Sartre attempt to overcome the assumptions of dualism, mechanism, and reductionism. They are, I think, reasonably successful, but I do have some doubts that I will present later. They also emphasize

that psychology must include meaning and therefore cannot be modeled on the impersonal sciences such as physics or chemistry. Merleau-Ponty has called one of his books *The Structure of Behavior* by which he means relationships as part of a context. Giorgi defines "structure" as "behavior that is ordered with respect to its situation" (1975, p. 208). In the introduction to the English translation of Merleau-Ponty's book Wild characterizes the position this way:

Human behavior is neither a series of blind reactions to external "stimuli," nor the projection of acts which are motivated by the pure ideas of a disembodied, worldless mind. It is neither exclusively subjective nor exclusively objective, but a dialectical interchange between man and the world...It is out of this dialectical interchange that human meanings emerge.

Some specific similarities in Merleau-Ponty with interbehaviorism include the following. Because every stimulation from the surroundings is influenced by preceding acts of the organism and because these past acts have brought the organism into contact with the stimulus, we cannot attribute the acts to the surroundings or to the organism but only to their dialectical interchange, their interactions. Similarly, stimulus and response are interdependent: the stimulus has no independent reality from the organism, and physiological excitation is a response, not an effect from outside.

Merleau-Ponty recognizes that distinction between stimulus function and stimulus object when he relates that the concept of stimulus confuses two meanings: one is that of the physical event and the other is that of the meaning of the event. He also recognizes two meanings of response that parallel those of response and response function: the movements of the organism provide one meaning and the meaning of these movements the other. He seems to also indicate the interdependence of setting and response, but the mode of expression makes a judgment difficult: "Situation and reaction are linked internally by their common participation in a structure in which the mode of activity proper to the organism is expressed. Hence they cannot be placed one after the other as cause and effect; they are two moments of a circular process" (p.130). Because of

this dialectic or interactive relation between milieu and individual it is not possible to reduce them to anatomy and physiology.

What things mean to people is central to phenomenology, and phenomenology holds that a psychology must take account of these meanings rather than resorting to descriptions of physicalistic or biological mechanisms. The world constructed by the physicist is not more real than is behavior nor is the world of the physicist relevant to behavior; behavior is a different type of event, one involving meaning. Giorgi (1975) takes up the case of a sleek airplane. Where does sleekness lie? In the plane? In the person? It lies not in either alone but in their relationship. In his words, "...perceived sleekness is...a certain way of relating to an object of the world; it is a way of behaving" (p. 208). Meaning is not mind but the relationship of the individual to the object. Merleau-Ponty (1963) tells us that "the subject does not live in world of states of consciousness or representations from which he would believe himself able to act on and know external things by a sort of miracle. He lives in a universe of experiences, ...in a direct commerce with beings, things and his own body" (p. 189). In another work (1962) he states "from the moment behavior is considered 'in its unity' and in its human meaning, one is no longer dealing with material reality nor, moreover, with a mental reality, but with significant whole or structure which properly belongs neither to the external world nor to internal life". Giorgi (1964) notes that phenomenology attempts to discover meanings people live, not means of control. It looks for no fixed or final truth but for continual change, a dialectic process. A truth is just something open to examination for whatever relevance it might have to the examiner. Likewise, Kruger (1981) refers to the world as a system of meanings, not stimuli. A stimulus is "a physicalistic abstraction highlighting one profile of a Gestalt imbedded in meaning". We do not perceive light or sound waves but houses, animals, leaves resulting in the wind, people talking, etc.

Phenomenologists sometimes use the word "mind" and regularly use the word "consciousness", but they redefine both. Consciousness is not a thing that contains objects from the world but rather it is a relationship. Sartre (1956) states "A table is not in consciousness—not even in the capacity of a representation. A table is in space, beside the window..." Lyotard (1945/1954) explains that the "mental" is not

inside the individual but consists of the relationship between the person and the situation. Further, "the me and the situation cannot be defined but in and by this relation". Zaner (1985) defines consciousness or mental life as a stance toward something or as an orientation toward things [intentionality]. Kvale and Grenness (1967) point out that "The necessity of an 'inner man' to guide behavior falls away when behavior is conceived as man's meaningful relatedness to the world. Behavior is a relation between man and the world, neither can be defined independent of the other" (p. 137) if behavior as such is to be comprehended.

Kruger (1981) attempts to describe the total interdependence of person and object by referring to the stimulus object as "that which shows itself". (Because of their mechanistic tone the phenomenologists usually avoid the word "organism" and "object" when speaking of this relationship). He wants to indicate that the world acts on the person as much as the person acts on the world even though we have no words that ordinarily express this. We can say "I see a stone", but have no way of expressing the stone's actions on our seeing. (Aristotle reported the same problem in Greek: the "actuality of color" and of flavor have no name (426a, 14).) To try to remove a person from this cohesion with things-that-are would be to destroy that person's context and therewith his or her meaningful life. Death destroys this cohesion. I am reminded here of a statement by Epicurus in the 4th century BC: "When we are, death is not; and when death is, we are not".

Now that I have presented some features that I consider positive I want to balance that with some reservations. These are directed more at those whose psychology is influenced by Husserl than those of the French school. Husserl never managed to escape mentalism or organocentrism and, apparently, neither have his followers. One of the difficulties, it appears to me, is with the concept of intentionality. A prominent spokesman for Husserlian psychology is Amadeo Giorgi whom I cited above. In one of his papers (1976) he tells us that "...consciousness is always consciousness of something that is not consciousness itself—and this is what is known as intentionality." So far, this is in line with Lyotard and others of the French school, who refer to consciousness as an orientation. But in the same paragraph he calls consciousness, after Gurwitsch, a "medium of

access", which suggests an intervening variable. He also refers to it as "a stream of activity that keeps bursting forth toward the world and needs, so to speak, objects in the world to help stop its centrifugal movement" (p. 311). Here we seem to clearly have an organism acting on the world, not a reciprocal actions. In the next paragraph he refers to "behavior and consciousness" as being directed toward something. Within two paragraphs he has gone from a nonmentalistic definition of consciousness to one in which it is an intervening variable, having directional powers of its own, and being additive to behavior. The old mentalistic and organocentric meanings of the word triumph. Kvale and Grenness, similarly, at times refer to consciousness and behavior and bring in directionality when the term intentionality arises. I must confess that I am unable to understand from the phenomenologists whether consciousness and intentionality are one thing or two, and if they do differ what that difference is; but I find that I usually part company from them whenever that term arises. A lesser criticism goes to the French. Ratner (1971) points out that both Merleau-Ponty and Sartre give emphasis to acts being determined by the individual and ignore the reciprocal action of the world. In light of phenomenology's effort to stress the interdependence of object and subject this seems to be a glaring inconsistency but, I suspect, another legacy of Husserl's notion of intentionality. The influence of William James on Merleau-Ponty may have also been a factor in his failure to break completely with organocentrism.

Contextualism

Contextual psychology has no major leader and no clear focus, but one can discern in some of the literature a number of psychologists who are giving greater emphasis to the context of which the organism is one part. We might better call it a movement, even if a rather vague one, than a system. Some writers take their framework from Stephen Pepper (1942) who considered contextualism to be one of several world hypotheses, but it seems to have developed somewhat independently of Pepper who, nevertheless, retrospectively provides a handy reference point. Some of the contextualists embrace dualism and some are seemingly free of it. A prime example of the latter is Jenkins—at least in seminal paper (1974)—whose research in verbal learning and recall led him to reject associationism with its machinery and to explicitly embrace contextualism including the context, texture, and strands delineated by Pepper (but without

reference to him). What is especially impressive about Jenkins is his profusion of experimental evidence that supports a contextualist framework and his refutation of a mechanistic or mentalistic one. In line with the phenomenologists he holds that no final truth or analysis exists because contexts are ever changing. Similarly, Chronbach (1974) notes the multiple interactions that occur in psychological events involve "a hall of mirrors that extends to infinity" (p. 119). He suggests that we give up looking for generalization and look instead for "contemporary facts" (p. 126). Sarbin (1977) examines the role of various root metaphors à la Pepper in personality theory. He finds the contextualist metaphor to be the most advantageous and relates it to his dramaturgical model for human behavior. We should, he argues, abandon the models of physical sciences in psychology as inappropriate; we should instead "deal with the human condition as we find it: in ever changing, ever renewing drama" (p. 39). This has elements of the dialecticians's constant change and the phenomenologist's rejection of physical models.

Hoffman and Nead (1983) consider Gibson's (1979, 1985) ecological perception to be a form of contextualism. Gibson abjures assumptions of internal representation and transformation and argues for perception as visual selection. He considers the world to be directly perceived. The sense organs extract from the flux of energy the stable features of the world. Practice brings increasing focus and differentiation. Gibson rejects the mechanics of optics and the presumed interpretation of the brain as providing any real understanding of perception. Haber (1985) commends Gibson's emphasis on the stimulus conditions as one pole but feels he still needs another pole to perception, that of a Helmholtzian organism role, an organism that processes the information from the stimulus array. An interbehavioral approach with its inclusion of the history of the organism and the meaning of stimulus objects that comprise the interactions—in other words, a more complete field—seems to be needed in the Gibsonian formulation. It would ward off the Helmholtzians and the information processors. The interbehavioral emphasis on meaning in perception and its occurrence as a joint product of object and organism may be closer to the French phenomenologists than to Gibson, although it is not inconsistent with Gibson. Gibson's work has had an influence on cognitive psychology as well as perception, especially through the work of Neisser (1976).

This brand of cognitivism moves decidedly toward naturalism but still retains some of its mentalistic tinge.

Among numerous additional examples of contextualism I could mention, I must include a reference to the fact that some, perhaps most, contextualists are mentalists. Hoffman and Nead inform us that "the general philosophy of contextualism is not at all constrained to be anti-mentalistic" (p. 509). Although they hold that contextualism starts with events, they implicitly assume the reality of minds and hold that various metaphors including those of information processing are ways of "get(ting) at different aspects of psychological phenomena for different purposes" (p. 538). Even Jenkins (1981) invokes mind and mental structures ("higher order structures", p. 232) despite his earlier paper (1976) that repudiated structures. Two further mentalistic examples are Bronfenbrenner's (1979) "ecology of human development" and Mischel's (1977) work in personality. Bronfenbrenner puts his nesting systems in a mind, and Mischel has recourse to information processing. Contextualism's flexibility is its disadvantage as well as its advantage. It can embrace or is embraced by those who begin with verbal constructs drawn from the common folklore as well as those who confine their work to actual events. Any contextual allies for interbehaviorism would have to be sought as individuals, not as a group.

Conclusions

Originally I had entitled this article "Some Allies of Interbehaviorism" but changed it to "...Possible Allies..." after a more careful examination of each of the systems, for in the majority of cases there are incompatibilities of interbehaviorism with some of the proponents or some of the components. But if we pick our way carefully through the thickets of thorns we might find a little fruit.

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Comment

Some Observations on "Psychobiology": The Name and the Concept

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One of the most interesting papers to appear in *The American Psychologist* for some time is one by Donald Dewsbury (1990) in which the author discusses the history and recent applications of the term, "psychobiology." It is the purpose of the present commentary to present some observations on this term and on the variations of the concept which it represents. These comments will be based on the perspective of Zing-Yang Kuo's (1969) epigenetic behaviorism combined with the interactional psychology of J. R. Kantor (1971).

In one sense, every act which is performed by an animal or person is psychobiological in that the entire organism as both a biological and a psychological being is involved. Whether the act is primarily biological or primarily psychological depends upon the level which the individual's species has reached on the phylogenetic and which the individual has reached on the ontogenetic developmental scale. This is because it is only at the higher levels of both of these scales that any organism can interact with its environmental context with a degree of variability, modifiability, and discrimination which goes beyond a purely biological level of adjustment. It is at this transition stage that the increasing complexity of the subject's capabilities become more and more dependent upon the history of its interactions with its context and less upon the development of its morphology and physiology. From that time on, its biological equipment provides the potential for but not the nature of its repertoire of interactions. It is those interactions which have evolved from the individual's previous interactional history which should be referred to as "psychological" according to the Kuo-Kantor thesis.

One of the most important principles of Kuo's (1969) epigenetic behaviorism is his behavior gradient theory. This theory postulates that the internal as well as the overt actions of the organism are actually part of every interaction and are not to be considered as the behavior's cause or its accompaniment, let alone

thought of as the behavior itself or as a substitute for the action of a "mind." In addition, behavior includes not only overt and covert bodily activity but also the ever-changing relationships between the organism and its environmental context.

Kuo considers his epigenetic behaviorism as a synthetic science which includes both psychology and the various branches of biology as parts of his approach. He regards the divisions of what are ordinarily thought of as different sciences as simply divisions of labor requiring different equipment and techniques of investigation and the use of a different nomenclature. Workers in these fields usually have special research interests, many of which are primarily physiological, or who study animal behavior experimentally (even with the lower species), and are accepted as psychologists. The necessity for the integration of these previously considered separate sciences is demonstrated by the recent text in child development by Cole and Cole (1989). Here the evolution of a child's interactions from biological to psychological are brought out very clearly.

One of the applications of the term "psychobiology" that is discussed by Dewsbury (1990) is that of Adolph Meyer (Meyer, 1986). Meyer's approach has the only utilization of the term which applies to an understanding of human subjects, in this case psychiatric patients. Meyer had studied with both William James and John Dewey (according to the *Encyclopedia Britannica*) and his all encompassing approach to his subjects turns out to be similar in theory and thoroughness to those of Zing-Yang Kuo and J. R. Kantor. It was my good fortune to be a psychological intern in the early 1930's in a Pennsylvania state hospital at which the superintendent had come from the Worcester State Hospital in Massachusetts where Meyer's system was developed. In this case the system was not merely a theory but was incorporated into a mental hospital administration by a staff of specialists. The staff included not only psychiatrists but psychologists and social workers. My internship and

subsequent two year residency included thorough training in the various aspects of Meyer's system, from the taking of patient's case histories to assisting the pathologist at autopsies. I was so intrigued with Meyer's broad approach to the understanding of behavior that I returned to campus life to study more anatomy, physiology and particularly the interbehavioral psychology of J. R. Kantor.

In his comments on the history of the term "psychobiology" Dewsbury expresses the opinion that its use has been prompted by an effort to avoid reductionism. Of this I have my doubts and Dunlap probably used it to avoid being associated with the dualistically oriented physiological psychology textbooks of his day. Others, such as Yerkes, no doubt wanted to identify their work as entirely different from that of other psychologists who were engaged in introspection. In this connection, it is interesting to note that both Yerkes and Dunlap became presidents of the American Psychological Association, Yerkes in 1917 and Dunlap in 1923. That psychology still thinks very highly of its outstanding scientific psychobiologists, is demonstrated by James McGaugh's presidency of the American Psychological Society as recently as 1990.

Following his history of the use of the term "psychobiology" by individuals, Dewsbury discusses its recent adoption by departments, journals, and grant awarding agencies. Although such adoptions

are so far limited in number, they seem to indicate a trend. From a practical (status?) standpoint the term gives research workers and their sponsoring units a definite advantage within the scientific community in that psychobiology is a recognizable and accepted branch of science which is worthy of support. If scientifically ambitious young psychologists are to be attracted to the field and if psychology is to survive as a science, one of many grant seeking scientific disciplines, the encouragement of psychobiological research is one good way to do it.

In closing, Dewsbury makes the comment, and it is certainly as good as any I could make, that the "complete psychobiologist" should seek whatever explanations can be found through biological research as long as he or she does not lose sight of the fact that every psychologist's primary interest should be the integrated behavior of the entire living, adapting, interacting organism.

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Comments

Can Naturalistic Science Survive in Today's Culture?

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Philosophy and psychology are two inseparable scientific enterprises that have been plagued with the problem of dualism throughout history. This dualism, according to J. R. Kantor (1963; 1969), is the product of the many contexts in which philosophy and psychology were evolved. In *The Scientific Evolution of Psychology* (1963; 1969) and in *Interbehavioral Philosophy* (1981), Kantor offers that the cultural, social, political, and economic contexts of various schools of thought, contribute to the naturalism or supernaturalism of intellectual activity in a given period (Kantor, 1981, pp. 44-45). Kantor concludes that the systems of philosophy and psychology of the present day are permeated with dualistic beliefs, arising from these contextual circumstances. Following his historical analysis, Kantor offers a systemic philosophy and a related psychology that are claimed to be naturalistic and monistic (Kantor, 1959; 1981). In this paper, the question is raised as to whether the current cultural community will support naturalistic science, including Interbehaviorism.

The State of the Cultural and Scientific Community

Science, akin to political and economic systems, is a social institution. This institution, while making a mark on the culture, is also directly influenced by the culture in which it exists. Presently, the cultural context for scientific activity is dualistic. Dualism, in turn is shaped by the social, political, and economic climate of the times. A closer look at these conditions and how spiritism is manifested in today's society, may provide some evidence concerning the character of psychology as a science.

Cultural Context

Kantor has made the case that in the past, factors such as population size, form of government, life circumstances, and other societal events, set the stage for naturalistic, nonnaturalistic or mixed sciences. As cultural circumstances become unstable, intellectual enterprises become increasingly nonnaturalistic.

Presently, the cultural and societal factors in most parts of the world are those that previously have prevailed during nonnaturalistic periods, as might be predicted by the instability in such societies. For example, the entire world's attention was recently captured by the Gulf War, a war fought over economic and political prowess. Worsening socioeconomic conditions for a majority of the population have been the breeding ground for lengthy revolutions in many countries, including Ethiopia, El Salvador, and Lebanon. In the not too distant past, the socially and economically oppressed people of Iran sought refuge in a fundamental religious group to provide them with promised freedom and the basic necessities of life. In Nicaragua, while the revolution for equality and freedom was not led by religious groups, it was strongly aided by the Catholic church (Randall, 1983).

Even in the United States, a vast group of people must increasingly struggle to provide food, shelter and adequate health care for themselves and their families.

In accordance with Kantor's analysis of the societal conditions giving rise to nonnaturalism in science, as people's economic situation worsens, their faith in god strengthens. In a recent Gallup poll (1987), 85% of a national sample said that they view religion as at least "fairly important" in their own lives. 91% of this population reported a religious preference, 71% believe in life after death, and 94% believe in god.

Scientific Context

Inasmuch as the scientific community is a subdivision of the larger culture, it is not surprising that scientists' attitudes toward religion are similar to those of nonscientists. For example, a survey of 425 behavioral psychologists, found that 80% reported a religious preference, 77% try to live according to religious principles and 46% said that their whole approach to life is based upon their religion (Bergin, 1990). It is not clear how such individuals can participate as members of a naturalistic scientific community during the week, and go home to religious practices on the weekend.

In addition to explicit religious beliefs, contemporary scientists incorporate religious doctrines of a less obvious nature into their scientific theories.

Dualistic institutions such as free will or the freedom to choose actions still thrive in psychological theory. Interest in the brain – the naturalized mind – as the subject matter of psychology, provides another example of this trend. These examples indicate a lack of readiness on the part of contemporary western culture to embrace a thoroughgoing naturalism in science.

Religious institutions serve important functions for members of society, among them a source of life meaning. Presumably, the conditions that give rise to religious belief have not disappeared: People are still in search of meaning and validity in their lives.

A Natural Science of Psychology

Nonnatural institutions are the main obstacles to the advancement of philosophy and psychology, according to Kantor. For this reason, Kantor has attempted to articulate completely naturalistic perspectives in these domains.

In order for a naturalistic view to take hold, “a complete change in intellectual culture” (Kantor, 1981, p. 343) is necessary. For Kantor, this means, “rebuilding the foundations of thinking and reasoning—changing the system of postulates with respect to man and his relations to the cultural milieu in which he finds himself” (1981, p. 343).

Herein lies the problem. Kantor himself has suggested that “if scientific psychology does not universally prosper as against transcendental systems, it is because the idealistic, or spiritistic ways of thinking are still too strong for a complete emancipation of the majority of psychologists” (Kantor, 1969, p. 382). Furthermore, how is any one scientist to construct a naturalistic system outside of the influence of the prevailing culture? Drawn into question, then, is the naturalism of Kantor’s own philosophy and psychology.

Summary and Conclusions

Scientific work occurs in a cultural context. Presently, this context is dualistic, mainly due to the political, economic and social needs of the people. The science of psychology that has emerged within this culture is also dualistic. Kantor explains that as long as science is a linguistic activity, there is the risk of “metaphysics as the disease of language” (Kantor, 1963, p. 48). Interbehaviorism attempts to minimize this risk by emphasizing that the scientist is verbally constructing an event which is continuous with but different from the original event. Science, however, is a social institution, and “the formulations of a novel system with new postulates may or may not become readily diffused” (Kantor, 1969, p. 382). What may help in its acceptance, is specification of the notion that Interbehaviorism itself and all other systems are verbally constructed. On the social level, measures can be taken to provide more cultural, political, and economic stability for the greatest number of people. While the cultural context of today has influenced intellectual and scientific work, Interbehaviorism as a naturalistic intellectual institution can also be influential in changing cultural practices.

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Reports

Interbehavioral Field Studies at the University of Nevada

Occasionally circumstances arise which allow researchers to pursue pragmatic purposes while simultaneously maintaining a coherence with their philosophical agenda. Here at the University of Nevada, we are currently involved in such a project.

Under contract with the State of Nevada, our Behavior Analysis Program provides a number of services to developmentally disabled clients in the Reno area. One of our clients, who resides in an institution, has displayed many dysfunctional behavior patterns for several years. These behavior patterns have been described as cyclical by the staff who work at the institution. Throughout the years, traditional behavioral methods of analyzing these patterns have not yielded descriptions of their contextual circumstances which allow for better interactions with this client. Our current research effort involves examining this client's interactions within their specific contexts. In order to accomplish this, undergraduates have been trained to observe and record coded interactions using a palmtop computer. The data acquisition phase of this project entails the recording of coded interactions for a period of 4 weeks, on an 18 hour per day schedule, corresponding with the waking hours of the client.

We see the use of a programmable DOS based palmtop PC (Hewlett Packard 95LX) as a technological improvement over the limited flexibility of a dedicated event recorder. Rather than being limited to a few fixed events the programmable palmtop is limited only by the number of codes that the observers are capable of mastering. The software, that was created specifically for this project by the researchers records coded interactions via a QWERTY keyboard using mnemonic codes (e.g., "c" = crying) and all

interactions are recorded in real time. The data are recorded in a usable format which can be directly uploaded via modem to either another PC or the University mainframe. This eliminates the burdensome (and often error ridden) task of entering data for later analysis.

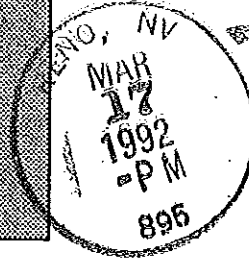
The planned analysis of these data will provide some unique opportunities to examine the client's interactions from an interbehavioral perspective. In addition to the usual frequency counts, distributions, and resultant graphs, the software will generate graphical representations of the interactions on a moment-to-moment basis as they evolve from one field into the next. This will be accomplished in much the same way as meteorological graphics on the nightly news.

Advances in technology represented by the introduction of the palmtop PC, combined with sophisticated software capable of representing data consistent with an interbehavioral perspective, may make it possible to mount research projects which demand a more thorough analysis of the circumstances in which behavior interactions transpire than was heretofore possible.

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