

# THE INTERBEHAVIORIST

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of Interbehavioral Psychology

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The Interbehaviorist is a quarterly publication of 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 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 triplicate 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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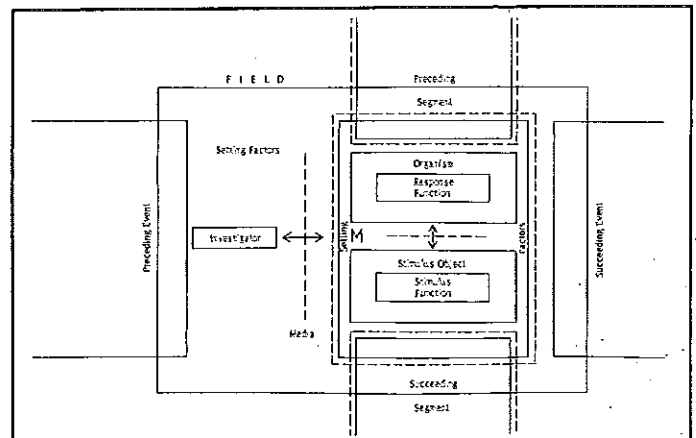
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## THE AGORA

The time has finally come. During the past several years, your editor has off-and-on-again sought the advice of The Interbehaviorist's Advisory Board regarding the newsletter's direction and his handling of the editorship. The Board always responded enthusiastically and supportively. In seeking the Board's advice, though, I must admit to having been subtly suggesting that the newsletter might benefit from a new editor.

Finally, I have made the difficult decision myself: I am stepping down as editor, albeit after consultation with the Advisory Board. Taking over the newsletter in 1983 brought excitement and stimulation. It was among the best times of my professional life -- time with my assistant editors and with the Advisory Board, though mostly with you, the readers. But, I have lost my edge. Just seeing to the newsletter's management has become more of a job than an abiding passion. I have been putting in little more time and effort than has been required. You and the newsletter deserve better than that.

What you deserve is what the new editor, Linda J. Hayes (University of Nevada-Reno), will offer -- the special interest, the passion, the time, and the energy. In consulting with several Advisory Board members and readers about the selection of a new editor, we all agreed that Linda was just the right person, just the right professional, just the right interbehavioral psychologist. We are pleased that she has accepted the honor and the responsibility.

Linda takes over The Interbehaviorist as of the mailing of this issue. Several matters remain to be settled, of course, but the publication is now in her hands. The composition of the Advisory Board, the editorial policies, and the title and format of the newsletter are hers to retain or alter as she sees fit -- just as they were mine. I see no need to burden Linda with formalities and traditions that may not be functional for her interests, though we have agreed to increase the subscription rates slightly. If you have any concerns about the future of the newsletter, Linda of course welcomes your comments and suggestions. She may be reached at the Department of Psychology,

University of Nevada-Reno, Reno, NV 89557-0062 (702-784-4998)

Linda and I are optimistic about the future of the newsletter, in part because of what is evident in the present issue: an increased number of submissions, especially from new authors. We thank David J. Chlubna, Thomas L. Sharpe, Andrew H. Hawkins, and Dennis Landin for their contributions, and encourage others to submit material as well. The newsletter is your newsletter.

Thank you all for your splendid support during my tenure as editor. It was occasionally a dickens of a time, but it was always the best of times.

In Memoriam

Now to some sad news. Although the current issue of the newsletter contains an interesting and lively potpourri of material, we first note the passing of William Stephenson (University of Missouri). In preparing a thoughtful memoriam for this issue (see p. 36), Parker E. Lichtenstein (Newark, OH) remarked:

I am glad that I had an opportunity to meet Stephenson. He spoke of his desire to promote closer cooperation with interbehaviorists. It is unfortunate that groups with so much in common are often so isolated from one another.

Notes from the Field

Sidney W. Bijou (University of Arizona) has published a 1989 chapter in Advances in Child Development and Behavior, entitled "Psychological Linguistics: Implications for a Theory of Initial Development and a Method for Research."

That Little Extra

We appreciate the "little extra" a number of subscribers included with their last year's subscriptions -- William M. Gardner, Linda J. Hayes, Noel W. Smith, and an unnamed generous other. These gifts allowed us to keep our subscription rates below actual costs once again.

New Subscribers

Theresa A. Habib (Farmington Hills, MI)  
Steven J. Meyers (Ann Arbor, MI)  
J. L. Penrod (Adrian, MI)

## IN MEMORIAM

William Stephenson (1902-1989)

William Stephenson's long and productive academic career was unusual in that it embraced two fields in which he held doctorates -- physics and psychology. As assistant to Charles Spearman, he became involved with factor analysis; this interest was further developed during his work as assistant to Cyril Burt, who was Spearman's successor at the University of London.

From 1939 to 1947, Stephenson was in military service. Then, in 1948, he went to the University of Chicago where he served until 1956 as Visiting Professor and Lecturer. In the late 1950s, he accepted an appointment in the School of Journalism of the University of Missouri, where he worked for the remainder of his life. Missouri gave him the freedom to follow his interests pretty much as they led him and as a result, given his great energy and enthusiasm, he was highly productive.

In 1935, Stephenson introduced the Q-methodology with  $q$  representing person correlations rather than the trait correlations expressed by Pearson's  $r$ . From the beginning, however, Q-methodology was seen as controversial. Burt and Stephenson were in disagreement, and the American factor analysis establishment led by Thurstone ignored or rejected Q. Yet for more than fifty years Stephenson nurtured, developed, and refined Q-methodology with unabated zeal. Although his sights were constantly fixed upon Q, his scholarly interests were extremely broad, ranging over practically all areas in which subjectivity might be considered important.

Stephenson and Carl Rogers were friends from the Chicago days. Rogers and some of his associates used Q-sorts, but did not employ the full Q-methodology of correlations and factors. It is somewhat paradoxical that most psychologists have used or at least have been familiar with Q-sorts, but very few have made use of the Q-methodology. This is not to say that Q-studies have not been conducted by people in other fields; they have been in relative abundance in such areas as political science, communication,

advertising, and education.

It was Stephenson's ambition to establish a science of subjectivity. He was sympathetic with the aims of humanistic psychologists, like Rogers, who employed a phenomenological method. At the same time, he was convinced that phenomenology lacked a satisfactory postulational foundation and methodology. Stephenson sought to work within a fully naturalistic framework and was, therefore, intent upon avoiding all "psychisms." He found what he was looking for in Kantor's interbehavioral psychology and, in particular, in Kantor's behavior segment and the formula for a psychological event. These Stephenson regarded as fundamental. Kantor, however, approached the subject (person) from the psychologist's standpoint (i.e., objectively). Stephenson, through use of the Q-methodology, extended an interbehavioral approach to embrace subjectivity, defined as self-reference.

In time, it became clear to Stephenson that Q operates within the probabilistic framework of quantum theory. A full statement of the implications of this position appeared as a five-part article by Stephenson in The Psychological Record entitled "William James, Niels Bohr, and Complementarity" (e.g., Stephenson, 198-).

Stephenson was a friendly man, and gracious in manner, yet he was an intense and enthusiastic person obviously completely dedicated to his work. He was often a severe and even a harsh critic, but his criticism was intended simply to place the same heavy intellectual demands on his associates as he had already placed them on himself. As a professional psychologist, Bill Stephenson was a maverick in the best sense of the word. He served psychology well and provided inspiration to many. We should be fortunate to have more like him. (Parker E. Lichtenstein, Newark, OH)

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## COMMENTS

## A Point Well Taken

Dennis J. Delprato

Eastern Michigan University

Comments on the relationship between interbehavioral psychology and the behavioral sciences more generally continue to arise, as well they should. Hayes (1989) has addressed one of the more forceful of these comments -- Skinner's (1988) disavowal of kinship between interbehavioral psychology and the Association for Behavior Analysis (ABA). He urged the interbehaviorists to steer clear of ABA because they are disruptive -- they are too critical. In return, Hayes commented that interbehavioral psychologists will continue with business as usual -- educating "the masses."

Hayes apparently thinks that the marriage between interbehaviorism and ABA is worth saving. I hope so, but Skinner's comments may be more in tune with how things are than with how we may wish they were. The marriage may once have had a chance of surviving, for Kantor (interbehaviorism) and Skinner (the major figure behind ABA) were driving forces in a literature that was unique in its potential for moving psychology forward. But survival may no longer be possible because Skinner's views have not developed beyond the advanced behavioral sciences of the 1930s (see Parrott, 1983). In contrast, modern scientific thinking is field- and system-oriented, which is incompatible with approaches such as Skinner's which hold, for example, that the ultimate causes of behavior are to be found in "the environment."

Hayes's optimism is based on her view that Skinner does not speak for ABA as a whole, which is supported by the actions of ABA and the Society for the Advancement of Behavior Analysis (SABA) -- SABA publishes The Behavior Analyst. For instance, ABA has approved the interbehavioral special interest group and SABA has appointed individuals with interbehavioral expertise to its journal editorial board. Given the vast difference between the field-systems perspective of interbehavioral psychology and the views of the major impetus for ABA (Skinner), then perhaps ABA has

progressed. Such conciliatory-appearing actions, however, may reflect little more than a superficial accedence to particular circumstances than a resolute commitment to examine critically what ABA stands for and to move ABA thinking forward.

To the extent that ABA is tied to Skinner's dictates, his point that interbehaviorists are unwelcome is well-taken. No tears should be shed over the rebuff, for Skinner's behaviorism has nothing to offer those who seek to advance behavioral science beyond schools that offer so-called philosophies of psychological science. Skinner does not realize that when sciences become sciences, then there is a discipline -- a science. Philosophies, such as radical behaviorism, are followed when workers have yet to get clear on their job. To Kantor, behaviorism was never a philosophy, but was science itself. The interbehaviorism that Skinner finds repugnant is not a philosophy in search of a science. Interbehaviorism refers to the most-recently evolved science of behavior (see Midgley, 1988).

We sometimes read that interbehaviorism offers a philosophy for the experimental and applied analyses of behavior (see Mahan, 1989). Here, for instance, interbehaviorism is taken to be strictly philosophical, attaining scientific status and applied significance by remora-like attachment to the "authentic" data-based science of the two aforementioned branches of behavior analysis. As my remarks should make clear, though, interbehaviorism is not a philosophy in search of a science and application.

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## BOOK AND JOURNAL NOTES

Gardner, W. M. (1989). Language: The most human act. Jacksonville, AL: Center for Social Design.

William M. Gardner's (Jacksonville State University) Language: The Most Human Act -- an interbehavioral account of the behavior of speakers -- has been revised. We reprint the book's preface below. An advertisement appears on the back cover of the newsletter.

## Preface

Few subjects in the history of science have generated the controversies that mark the history of the study of language. No subject matter in psychology, with the possible exception of perception, has become so much identified with speculative accounts mired in mind-brain-body metaphysics. Selection of a textbook for a course titled "Psychology of Language" has become a choice between the mentalists and radical behaviorists. That is, language is conceived as either a mind-brain process or conditioned behavior.

The notion of internal controllers of human behavior is a legacy of the Dark Ages. The soul-mind has a reality born of verbal traditions of Christian thinkers. Even Western philosophers who became Christian atheists stipulate an unseen internal controller of human behavior. In Western philosophy, the soul has survived God. Moreover, the mind (the mortal aspect of the soul) has in recent decades been reincarnated as the brain. Psychologists have come to present the brain as an inscrutable force that controls behavior.

Skinner's behavioral account (by far the most credible behavioral account) reduces linguistic acts to operant contingencies, and in that sense is adequate. Unfortunately, it is an explanation that preceded the description of language acts. It is fair to say that radical behaviorists (or Skinnerians) are prepared to explain any behavioral phenomenon that other, less inspired, researchers bother to observe, document, and describe. For the faithful Skinnerian, observations of reinforcement contingencies alone supply a sufficient

operant account. It would appear that Skinner has exorcised the mind at some cost to the status of the subject matter -- the behavior of organisms.

The eclectic instructor teaching the Psychology of Language may give both accounts (i.e., mentalistic and behavioristic) equal time, and then evaluate the students on their ability to conduct the wise exegesis. In this case, much time will be spent on definitions and conceptions, and little time will be given to description of actual linguistic behaviors.

There is little hope that psychologists in general will ever focus on the naturalistic subject matter that Aristotle gave us -- the interactions that develop between organisms and stimulus objects, interactions which develop from experience. If we could leap back over the years dominated by the Roman Church, back to Greek naturalism, language acts would appear as the premier examples of psychological events. Such a leap was the goal and inspiration in writing Language: The Most Human Act. My objective was to approach language as though it were naturally occurring behavior, that is, organisms making specific acquired adjustments to stimulus objects. Thus, there was no attempt to follow Skinner's lead and reconceive, or preconceive, language as operant contingencies. And, of course, no speculations about internal controllers were entertained. Specifically, the principles followed were those formulated by J. R. Kantor.

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Prilleltensky, I. (1989). Psychology and the status quo. American Psychologist, 44, 795-802.

In a recent American Psychologist, Prilleltensky (1989) brings attention to what he considers psychology's failure to integrate itself with and influence the political, economic, and social institutions of which it is a product. He points out that, according to the codes of ethics of both the American and Canadian Psychological Associations, psychology's own objectives may be hindering the

improvement of the human condition by "guarding the interests of the status quo." In explaining why this is so, he comments on the adverse characteristics of the behavioral perspective, the organic perspective (functionalism), humanistic psychology, and cognitive psychology. Their shortcomings are summarized in his conclusion that all four approaches are organism-centered rather than integrated with the institutions in which psychology plays a part.

In the case of behavioral psychology, Prilleltensky (1989) points out that although it emphasizes the modification of environmental conditions, a significant differentiation should be made between (a) altering the immediate conditions versus (b) modifying more encompassing social environments. As for functionalism, he comments:

The clear conforming message of functionalism was and still is that human suffering is predominantly a result of a deficient organism. From this viewpoint, environmental factors such as poor nutrition, detrimental living conditions, and unemployment are caused by the inability of those people to help themselves. (p. 798)

In discussing humanistic psychology, he concludes: "In its battle against determinism it overlooked some environmental variables that exercise considerable influence on human personality and behavior" (pp. 798-799).

Of cognitive psychology, he notes:

The cognitive psychologist, by focusing almost exclusively on internal processes, is exposed to the risk of losing sight of sociohistorical variables that may influence our way of thinking and operating in society. (p. 799)

Prilleltensky makes no mention of interbehavioral psychology, and one cannot help but wonder whether Kantor's (1971) following comments would have met with his approval:

It is our theory that through contact with persons and institutions we acquire a very large series of behavior

segments which make the reaction conditions of our everyday conduct. These social reactions are integration products of the interplay of men and institutions and let us not for a moment overlook the fact that we are talking about actual acts, ways of eating, walking, talking, playing, etc.... There are as many reactions as there are permutations of individuals, groups, and institutions in social situations.... Social conduct, we repeat, consists of behavior segments developed through contact with social institutions or common stimuli, and the nature of the behavior is a direct derivation of the stimulating circumstances in which the person acquires it. (p. 799)

Toward the end of his paper, Prilleltensky's basic thesis becomes more obviously the advocacy of some vague and undefined political or social reform, for he says:

Unless individuals are aware of its ideological deceptions of which they are victims, they are unlikely to engage in change promoting activities. Although awareness does not necessarily guarantee action, it is certainly a condition sine qua non. Psychology is probably the most appropriate science to develop that awareness. In exposing the mechanisms of the prevalent ideology, psychology can make a meaningful contribution to the course of social change. (p. 799)

The activist role that Prilleltensky recommends for psychology, though, is inappropriate for a scientific enterprise. It is already the role of such groups as Common Cause, environmental activist organizations, and investigative reporting by the media. However, again, as in so many cases, the words of Kantor (1971) seem appropriate:

Although scientific workers are presumed to be absolutely critical in their attitudes and to base their scientific information and judgment upon what they can determine to be actual occurrences, they are nevertheless greatly influenced by

authorities and school affiliations.... The subtle character of their acquisitions is readily understood from the fact that institutions and reactions to them appear to the person to be as natural facts with apparently no beginning and no end. Anyone who attempts to change or remove one of these absolute institutions meets with the dire wrath of the individuals who have already built their behavior around such common stimuli. Only through an acquaintance with other and conflicting institutions can we be freed from the influence upon our behavior of the original stimuli found in our own family, nation, or other groups. (p. 254)

The primary institution with which psychology is striving, or should be striving to identify itself, is the scientific community. This, like other institutions, has its standards and its ethics, and although the latter does and should include the furtherance of human welfare, this goal can be achieved by psychology only through the study of human behavior in all of its contexts, including those that are institutional in nature. When the favorable or unfavorable effects of a person's surrounding become apparent, modification of such surroundings, when indicated, will, we hope, be undertaken by groups outside the scientific community. Psychology, more than any other scientific discipline, has problems with its own identity as an institution, and any restructuring will no doubt have to be directed toward them for quite some time to come. (Harry C. Mahan, Oceanside, CA)

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Spanos, N. P., & Chaves, J. F. (Eds.). (1989). Hypnosis: The cognitive-behavioral perspective, Buffalo, NY: Prometheus Books. (511 pp. + iv. \$34.95)

Building on the work of Robert White, Theodore Sarbin, and Theodore Barber, the editors of Hypnosis have compiled a volume of theoretical and empirical papers that adds considerable weight to the view that hypnotic behavior does not consist of a mysterious trance in which the individual is an automaton. Instead, hypnosis involves a context in which the individual interacts with a "director" and strives to behave in the manner the director describes. Kantor likewise argued against a mechanistic interpretation. He described hypnosis as detachment from most sources of stimulation, but did not discuss any role for a director.

From this perspective, so-called hypnosis comes into continuity with such ordinary behaviors as communication, social interaction, expectancies, imagining, and reinforcement. However, the dualism implied in the title's hyphenated "cognitive-behavioral" is represented by some of the writers and to that extent fails to break with the problems of the past. For example, in a section devoted to theory, Michael Diamond states that the "cognitive model is in no way antithetical to the notion of trance and/or altered state(s) of consciousness" (p. 382). He is quite right: The cognitive model is both mechanistic and dualistic, and is thereby in total harmony with concepts of trance and state. As a result, many of the old confusions continue. In the same section, Kirsch and Council use response expectancy as an explanatory principle; and Sarbin contrasts his dramaturgical or role-taking model with mechanistic accounts. These two papers do not assume cognition to be an internal event set apart from behavior, but instead they deal with cognitive activity as concrete events. The result is much more salutary and cogent.

In nineteen papers, this book provides an abundance of information on empirical, conceptual, and methodological accomplishments that advance our understanding on a variety of topics in hypnosis. A section on applications is also valuable. In all, Spanos and Chaves present the state of the art in understanding hypnotic behavior. Their book is an invaluable reference for anyone interested in the topic. (Noel W. Smith, SUNY-Plattsburgh)



## BOOK REVIEWS

Review of K. W. Buckley's Mechanical Man: John Broadus Watson  
and the Beginnings of Behaviorism

David J. Chlubna

Sturgeon Bay, WI

Kerry W. Buckley's (1989) biography of John Broadus Watson, Mechanical Man, is not so much the story of one of American psychology's great pioneers as, more importantly, the history of the social and cultural events that were instrumental in transforming the institutionalized traditional (i.e., European) thought of this country from a pastiche of phenomenological philosophy to an exciting and vigorous method of human behavioral control from the turn of the century through World War I and the 1920s.

Buckley traces a fascinating line of American cultural development from the advent of industrialization and the steady migration of populations to large cities, post World War I economic boom, and subsequent bust. In a country eager to separate itself from European influences, John Watson was viewed by many of his contemporaries as the embodiment of an America that could correct the mistakes of the past through scientific research and the strategic application of behavioral prediction and control. According to Buckley, the quest for human efficiency and planning fueled Watson's attempts to help create a new kind of professional -- a professional who would design programs to insure stability and predictability, not only for the individual, but for society as a whole. This formidable undertaking would require a technology that would be able to address all the needs of an optimistic and future-oriented culture. John Watson presented Behaviorism as an answer to the long unresolved questions of human behavior and became its champion/hero as a result.

In his attempt to integrate historical events with the developmental history of John Watson, Kerry Buckley has done a magnificent job. His concise but detailed profiles of G. Stanley Hall, John Dewey, and James McKeen Cattell are superb and relevant to the understanding of the evolution of American psychology, and behaviorism in particular, since Watson

challenged the vagueries that abounded in the works of these notable psychologists.

Of particular interest is Buckley's numerous references to the ever-changing character of American society at a time of transition from a basically rural or village life-style to highly productive industries and cities. Parallel to the discussion of cultural changes taking place is the life of John Watson--born in a South Carolina hamlet in 1878, rising to fame (Johns Hopkins University) and fortune (New York City), and retiring for his remaining 13 years to a Connecticut farm, not unlike the farm of his childhood, until his death in 1958.

The largest section of Mechanical Man is devoted to Buckley's examination of Watson's development of behaviorism, first from his work with terns and white rats, to infants, and finally, to consumers. Watson seemed to relish the opportunity to use his behavioral technique with such a large "experimental" group. He viewed his role at the advertising agency as just one more example of the everyday uses of behaviorism for the control of human functioning, in this case, buying and selling.

The early part of this century offered few opportunities to make a suitable living at the practice of psychology. Indeed, Watson himself seemed very well acquainted with the limitations of traditional (i.e., introspective) psychology and the lack of opportunities to put into practice the methods gleaned from years in the animal labs of the University of Chicago and, later, Johns Hopkins University.

As is well known, after Watson's ignoble exit from Johns Hopkins in 1920, he began a career with two of the largest advertising agencies in the business, J. Walter Thompson and William Esty. Many observers have speculated about Watson's possible sense of betrayal concerning his "exile" from the academic community,

despite his many active connections with former students and teachers. One popular tale is that of Watson wreaking revenge on the society he hoped to improve through a new kind of advertising based on his own theories of emotion (i.e., fear, rage, and love as the basis of all emotional expression) and through the calculated pairing of powerful unconditioned stimuli with suitable neutral stimuli. Hence, according to some researchers, Watson's ad campaigns had the stamp of scientific credibility and, therefore, were used extensively and effectively to control the direction of society from self-denial to self-fulfillment. What seems more accurate is Buckley's argument that Watson was interested in the panacea of the post-war period: personal success and the prestige, power and financial security that follow. If he couldn't have success in academia, then success in the commercial world would have to do. "It can be just as thrilling to watch the growth of a sales curve of a new product as to watch the learning curve of animals or man," writes Watson in the 1936 edition of The History of Psychology in Autobiography (Watson, 1936, p. 280).

Watson never lost his fervor for behaviorism, writing many scholarly and popular articles on the application of behaviorism to daily life, especially the raising of children. One piece of writing unpublished during Watson's lifetime, but thankfully quoted at length in Mechanical Man, is his article titled "The Behaviorist's Utopia." In this projection of an alternative sociopolitical system, all conventional codes of conduct and mores are replaced with Watsonian behavioral laws. While not as polished as Skinner's (1948) Walden Two, Watson's paradise is an illuminating, if not frightening, look at 1920s behaviorism writ large.

In his examination of the changes occurring in American psychology at the turn of the century and of the effort made on the part of American psychologists to legitimize their profession, Buckley credits, in part, the work of historian Christopher Lasch (1977, 1979) who has painstakingly considered the long term effects industrialization has had on the

world and, in particular, on American families and culture. Those readers interested in cultural change in the 20th century will not be disappointed with a perusal of Lasch's viewpoints on the many pitfalls of self-fulfillment.

In summary, Mechanical Man is a work that not only considers the powerful impact John Broadus Watson had on American psychology and society, but also the changing cultural traditions of his time and the effects such an upheaval had on Watson and his peers. A great void was present in American culture after the rise of industrialism: Ethics and values were questioned and some rejected in favor of new explanations of human events. Watson and others attempted to explain and improve the lives of people trying to adjust to the cultural turmoil in America and Europe. While some observers are skeptical of Watson's tangible contributions to psychology, no one can deny the tremendous influence his ideas and writings had on succeeding generations of behaviorists, not to mention consumers.

Mechanical Man will be of interest to interbehaviorists who want to know more about the major historical events that produced the early behaviorists and their struggle for acceptance as natural scientists--a status so yearned for and now so easily taken for granted.

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Some Comments on B. F. Skinner's Recent Issues in the Analysis of Behavior

Harry C. Mahan

Oceanside, CA

The twelve papers in B. F. Skinner's (1989) recent collection should be of interest to interbehavioral psychologists, but two of them address particularly important issues -- issues long-prominent in Skinner's thinking.

First, in "Whatever Happened to Psychology as the Science of Behavior?," Skinner answers that the ancient concept of mind is very much alive. Explaining why this is so is anything but simple. It is not my purpose to cover the many points emphasized by Skinner, as his original paper is readily accessible. Attention should be called, however, to what he considers the main obstacles to psychology's acceptance of behavior as its subject matter. These obstacles represent an active effort on the part of organized psychology to advance ideologies at the expense not only of psychology's future, but of the future of the human race.

This is a serious charge, and one that perhaps only Skinner could express convincingly, but it is unlikely to be answered because anti-behaviorists seek to avoid such confrontation. They either refer to imaginary straw men presented in patronizing references to behaviorism's advocates or they completely ignore the contributions of behaviorists and interbehaviorists published in books and journal articles. Added to these is the "silent sabotage" of the contributions made by behaviorists in psychological organizations and psychology departments.

The three anti-behavioral movements to which Skinner's accusations are directed are humanistic psychology, psychotherapy, and cognitive psychology. By far the most powerful is cognitive psychology because of its success at identifying itself with science, as well as its political power within academic psychology. Ironically, Skinner points out, cognitive psychology has within itself a self-destruct mechanism that will eventually go off as it adheres to the assumption that psychological problems will eventually be solved through studies of the brain.

Interbehaviorists will find much to agree with in Skinner's arguments, but a somewhat broader picture is also

available, which J. R. Kantor offered in his advanced course in general psychology, which I was privileged to take in 1935. Kantor pointed out that the doctrines of established institutions are very difficult to change and that mentalistic psychology was already well-established in the days of William James. Although most psychologists nurture the illusion that they are rational, independent thinkers, we are all products of some psychology department, and our acceptance or rejection of ideas in psychology will fall within the framework of our backgrounds.

History tempts one to make a comparison between Kantor and John Wycliffe who, in the 14th century, attacked the institutions of his day, proclaiming among other things that transubstantiation was nonsense -- or words to that effect. Because transubstantiation was basic to the political and religious institutions of his time, Wycliffe was fortunate to have the protection of the most powerful man in England, John of Gaunt, who saw to his survival. His followers, however, were less fortunate: They were often executed and their dissenting doctrine (Lollardry) was driven underground. Almost two centuries passed before Wycliffe's challenge surfaced once again, and since then progress in combating the control of human thought by the defenders of institutionalized beliefs has advanced tremendously. That it still has some distance to go is brought out by Skinner.

I have a very good friend, a highly intelligent and well educated woman in West Sussex, who, as a member of the Church of England, completely accepts transubstantiation. However, she and I have enjoyed discussing English history by the hour with no mention of my naturalistic orientation as an interbehavioral psychologist. Her beliefs are no threat to me, nor mine to her, but were she head of a psychology department in which I was a member, I would either react like a biologist expected to accept "creation science" or seek employment elsewhere, depending on her tolerance.

Although the doctrine of transubstantiation is no longer an issue,

other issues are equally dear to the hearts of modern-day psychologists -- issues that are completely unacceptable to those who are interbehaviorally inclined. I am fortunate to be a member of the latter group and to live in an age when many others feel as I do -- that human action, human thought, and human feelings must be considered as behavioral events within nature.

The second paper of note is Skinner's "The Origins of Cognitive Thought." It also deserves careful scrutiny by interbehavioral psychologists because they will find much in it with which they can agree, but also, at the end, an excellent example of the differences that still exist between behavior analysis and interbehavioral psychology. Although Skinner, himself, has castigated the psychological establishment for ignoring behaviorism, he is just as guilty of ignoring interbehavioral psychology.

The title of Skinner's paper is not quite right because the paper actually deals, not with the origins of cognitive thought, but with the origins of about 80 terms in the English language referring to cognitive thought. Skinner obviously spent a great deal of time in etymological research, finding that many terms that now refer to events and processes considered mentalistic originally had much more behavioral referents. They pertained to events that included the individual's stimulating surroundings, as well as to the behavior of the total individual. In some instances, the same term had a variety of meanings, referring to different aspects or to different orientations toward the behavior taking place. The results of Skinner's research should be of interest to all psychologists, for psychologists need to be clearer and more precise in their thinking and writing -- which Skinner points out has not yet come to pass.

As one proceeds with Skinner's paper, a number of quotable statements arise. These emphasize points that behavior analysts and interbehaviorists have accepted unconsciously, but that they have probably not set down on paper. In Skinner's writing, these points seem to fall into place quite naturally; they are worth copying for further reference. Some examples are, "To remember what something looks like is to do what we did when we saw it," "Take any sentence in which the

mind does something, and see if the meaning is substantially changed if you substitute person," and "Cognitive processes are behavioral processes; they are things people do."

The place where the interbehaviorist parts company with Skinner is in oversimplification -- a long-standing occupational disease afflicting behaviorists. This tendency, and the related attempts to describe complex psychological interactions in terms of physical and physiological stimulation and response, has made behaviorism unappealing to me for quite some time (e.g., "but we have only begun to construct a science needed to analyze the complex interactions between the environment and the body and the behavior to which it gives rise." [p. 251] (*italics mine*)).

By oversimplification, I am referring to Skinner's insistence on analyzing behavior solely with respect to the "contingencies of reinforcement." The first thing the student of interbehavioral psychology learns is that, in addition to reactions being variable, differential, modifiable, integrated, delayable, and inhibitable, an analysis must also be made of the nature of the stimulation, the media of contact, the surrounding circumstances, the setting of the stimulating agent, the reacting agent's reaction systems operating at the time, and the behavioral history of the individual. The latter, by the way, is a person and not just a body.

In short, in reading Skinner, or any other behavioristic writer, one must remember that behaviorists as well as cognitive psychologists are expressing views that, although they may appear to represent the writer's independent thinking, are nevertheless constrained by previous commitments to a particular school of thought with which they are identified. Although Skinner has developed a technology that takes full advantage of the strong points of behaviorism, and they are very strong indeed, he is still limited in his thinking by the boundaries of behaviorism.

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## An Interbehavioral View of Sport Pedagogy Expertise

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Instructional effectiveness is fractionated by evaluation research that yields conflicting findings (Borich, 1986) and by practitioners who are often unwilling to accept each other's point of view (Berliner, 1986; Finn, 1988; Firestone, 1987). Alternative strategies and tactics are required if we are to mend the fragmentation within educational research practices and then determine what comprises expert instruction (Howe, 1988; Rothig, 1987).

Behavioral research on instructional effectiveness has historically viewed teacher behavior in terms of isolated components, disregarding the field-like or systemic nature of instruction-in-context (Graham & Heimerer, 1981; Johnston & Pennypacker, 1980). The lineal-mechanical views have largely overlooked important characteristics such as temporal locus and the extent of teacher behavior, the context or setting in which the instruction occurs, and the multi-directional relationships among the factors operating within an expert teacher's domain. An alternative perspective -- one that focuses on response-response and stimulus-response interdependencies and that monitors the rapidly occurring streams of events -- is required to portray accurately and completely the complex relationships which are operative within expert instruction.

Although traditional research methods have been able to describe gross differences between effective and ineffective instructors, they lack a systemic focus and have only allowed educational researchers to point to "true" experts in an intuitive fashion (Dawe, 1984; Eisner, 1983; Gage, 1978; Rubin, 1985). These methods have not been able to demonstrate how expert teachers orchestrate their complex repertoires in a well-understood or empirically well-defined fashion. What is needed is a paradigm that allows for fine-grained, systemic analysis of experts engaged in

the teaching process.

One alternative may be found in the interbehavioral model, for it departs from single-response and isolated stimulus-response lineal analyses (Kantor, 1922; Lichtenstein, 1983; Ray & Delprato, 1989). Implementation of a multiple-component, multiple-cause paradigm that recognizes the probabilistic organization of behavioral and environmental events across time allows the educational researcher to move beyond a mere intuitive grasp of the expert pedagogue.

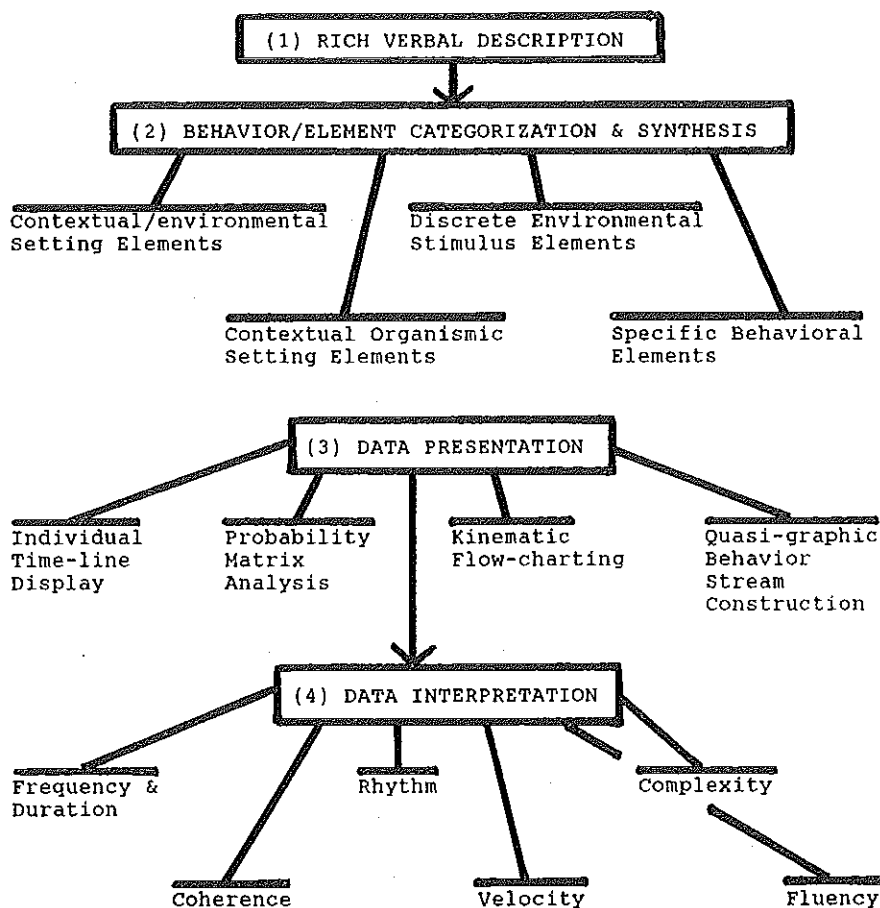
The purpose of the present study was twofold. First, we sought to improve the extant descriptions of expert instruction specific to physical education. Second, we sought to validate the utility of the interbehavioral paradigm in describing the inherent coherency of the behavioral interactions of an expert teacher. More specifically, an "interbehavioral analysis" was conducted on an expert tennis instructor engaged in a model demonstration lesson.

### Methods

A model demonstration lesson was videotaped and then analyzed according to the flow chart presented in Figure 1 on the next page (see also Ray & Upson, undated; Ray & Delprato, 1989).

First, a narrative account of the lesson was constructed -- an account that identified and operationally defined contextual/environmental setting factors, discrete environmental stimulus elements, contextual organismic setting elements, and specific behavioral events. An exhaustive coding system was then developed on the basis of this initial analysis. Mutual exclusivity with respect to event categorization (i.e., the inability to track simultaneously occurring and/or overlapping events) was a constraint on retaining temporal locus and extent, and was therefore disregarded.

Real time coded data from the videotaped lesson were entered into a microcomputer and the data groups merged



temporally into one exhaustive data set upon completion. Conditional probability matrices and kinematic analyses were then employed to identify strings of elements (see Ray & Delprato, 1989). Lag analyses were conducted to determine the relative temporal contiguity among element strings. Finally, graphic analyses of high probability element strings were made in order to examine temporal relationships in terms of rhythm, coherence, velocity, complexity, and fluency (see Ray & Upson, undated).

#### Results

These analyses yielded three primary findings. First, we found evidence of a highly coherent system of teacher activity. The degree of coherence reflects the actual versus possible number of different elemental pairings -- or chains -- observed. In effect, coherence represents the degree of order and consistency (i.e., predictability) in the system under study. In other words, high elemental pairing probabilities of high frequency occurrences reflect a greater organization in the field system. Conversely, low elemental probabilities of low frequency dispersed evenly throughout the behavioral and elemental categories

indicate a lack of coherence.

Second, we found that high behavioral velocity (e.g., speed of change in teacher behavior) covaried positively with the degree of complexity (e.g., number of behavioral events necessary to describe the system). That is, the rate at which any kind of elemental change is initiated covaried with the number of different elemental categories required for exhaustive systemic description. This finding corroborates the intuitive perception that as teachers attain greater expertise, they acquire a larger repertoire of instructional behaviors and implement them at a more rapid and time efficient rate.

Third, we found strong evidence for a consistent rhythm of behavioral display. That is, recurrent chains or streams of elements were found to have a high probability of occurrence. This supports the proposition that expert teachers attain a great degree of consistency and predictability in their instructional displays.

With respect to the content of the instructional interaction, these data showed, first, that relatively brief modeling episodes were dispersed evenly

throughout the lesson, with instructor modeling being alternately supplanted by students imitating. Second, positive feedback (e.g., "Good job") functioned as a reliable precursor (trigger) for verbal instruction (e.g., "Hold the racquet higher") and for practice management statements (e.g., "Try to serve the ball ten times and then move to the volleying station"). That is, positive feedback keyed the emission of the immediately succeeding behaviors of verbal instruction and practice management statements. Third, verbal skill sequence descriptors were used by the teacher within and immediately following modeling episodes.

#### Discussion

Overall, the interbehavioral approach was shown to fulfill a number of roles in sport pedagogy research. First, it provides a more effective means for categorizing instructional systems in that it avoids imposing a value-laden conceptual scheme on the data inherent in deductive methodologies. Granted, a completely valueless system is improbable, but there are degrees of value-ladenness. The interbehavioral paradigm allows a more inductive, data-driven approach than is typically implemented.

Second, the interbehavioral paradigm proved an excellent model for describing the components of expert instruction. An improved understanding of the behavioral intricacies and environmental contexts of the systems in which expert teachers operate, and in which they optimally orchestrate, should teach us more about what it means to be a teacher par excellence.

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Author note: A fuller description of this research is available from the first author, Professional Physical Education, P.O. Box 6116, West Virginia University, Morgantown, WV 26506-6116.

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BOOK ANNOUNCEMENT

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